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ABSTRACT

An introduction to a collection or bank of reading objectives devised to aid school personnel in planning, conducting, and evaluating instructional programs, this manual contains: an "Introduction" which discusses the rationale for the System for Pupil and Program Evaluation and Development (SPPED), the development of the SPPED reading objectives, levels in the SPPED reading bank, and summary and recommendations for use of the manual; "Generic Objectives," which looks at the structure and components of generic objectives, styles and conventions in generic objectives, and classification and coding of generic objectives; "Criterion Objectives," which includes summative criterion objectives, sampling versus summative criterion objectives, and a summary; "Building a Reading Curriculum," which is concerned with organization, selecting objectives, sequencing objectives, adding and modifying objectives, and the curriculum bank; "Instruction and Objectives," which discusses organizational models for instruction, instructional activities, and banking instructional resources; and "Evaluation," which presents the purpose of evaluation, evaluation design, testing, and test item construction. (WR)

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READING | SPPED | TRAINING MANUAL

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TRAINING MANUAL
FOR THE USE OF OBJECTIVES IN THE BANK OF OBJECTIVES, ITEMS, AND RESOURCES IN READING

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FOREWORD

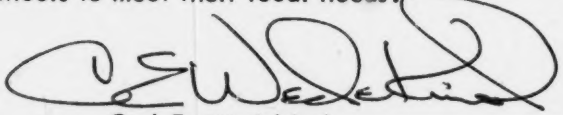
This manual introduces the reader to a collection or bank of reading objectives devised to aid school personnel in planning, conducting, and evaluating instructional programs. The manual describes the nature of the objectives, suggests specific procedures for their use in curriculum development, and discusses their implications for instruction and evaluation. The objectives themselves are contained in two other publications: SPPED Resource 5000: Generic Objectives for the Bank of Objectives, Items, and Resources in Reading and SPPED Resources 5001: Criterion Objectives for the Bank of Objectives, Items, and Resources in Reading.

SPPED, the project of which the reading objectives are a component, is a System for Pupil and Program Evaluation and Development. The purpose of SPPED is to improve educational decision making and instructional management by focusing attention on the intended outcomes of instruction, by fostering evaluation procedures that relate measurement and objectives, and by applying computer technology to quicken and simplify planning, management, and evaluation tasks.

The overall SPPED project, including the bank of reading objectives, was conceptualized by and is under the direction of Robert P. O'Reilly, chief of the Bureau of School and Cultural Research. The reading objectives and some related materials were prepared by the Educational Systems Division of Random House working in conjunction with State Education Department staff. S. Alan Cohen was the project director and John Bednarik the assistant project director at Random House. This manual was written by the staff of the Bureau of School and Cultural Research with Howard Berkun, Robert O'Reilly, David Rosen, Ruth Salter, and Martha Zakis contributing.

The reading bank is the product of close cooperation between the Bureau of School and Cultural Research and the Bureau of Reading Education. Jane Algozzine, chief of the Reading Bureau, participated in the planning and serves as a project director. Frances Morris, associate in reading education, has had a major role in the editing and review of the objectives. Ruth Salter, associate in education research, deserves special commendation for integrating the activities of the two bureaus and for her editorial and monitoring efforts in bringing the objectives and the manual to their current level of development.

Both the objectives and the manual are developing resources that will be modified and refined over time. Their initial use in the schools is to be experimental with definite provisions for followup by the Bureaus of Reading Education and School and Cultural Research. School personnel are urged to approach the objectives and the manual with this in mind and to regard them as starting points for their own efforts--creative efforts that will be shared with fellow educators throughout the State. Above all, it should be remembered that the SPPED Bank of Reading Objectives is a resource to be adapted and modified by local schools to meet their local needs.



Carl E. Wedekind
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CHAPTER 1

INTRODUCTION

SPPED is a System for Pupil and Program Evaluation and Development. Its purpose is to improve educational decision making and instructional management by focusing attention on the intended outcomes of instruction, by fostering evaluation procedures that relate measurement and objectives, and by applying computer technology to quicken planning and evaluation tasks.

The simple concept underlying SPPED is that if you determine the goals of your instructional program, clearly specifying just what it is you want students to do, and if you then test students with items based on the goals or objectives, you will know whether or not you are achieving what you set out to accomplish.

The major components of the SPPED system which are now available or planned are:

1. Banks or collections of objectives, test items, and resources or references to instructional materials.

2. Comprehensive Achievement Monitoring (CAM) and mastery testing, two approaches to evaluation using criterion-referenced testing.

3. Training manuals for personnel at all levels of instructional management.

4. Computer programs for accessing and refining the banks, for test scheduling, and for reporting test results in a variety of ways.

In this developing system, the Bank of Reading Objectives is ready for extended field use. The purpose of this training manual is to assist school personnel in using the

bank for planning, installing, and managing objectives-based reading programs to meet the needs of local students. The manual explains the background and contents of the bank and suggests procedures for its use in the three major aspects of a reading program--curriculum, instruction, and evaluation.

In this first chapter, we will present the rationale for a Bank of Objectives, Items, and Resources (BOIR); tell how the bank of reading objectives, the portion of the Reading BOIR which has been completed, came into being; and describe the levels system used for the bank. Succeeding chapters will describe the reading objectives in detail and will discuss the processes involved in establishing a local curriculum, organizing instruction, designing and selecting appropriate instructional materials, and using evaluation for the management of instruction.

The Rationale for SPPED Banks

The rationale--the very necessity--for having centralized resources or banks of objectives, items, and resources is a matter of time, energy, and money. Why this is so will be clear when one considers the contents of the banks.

The objectives in the SPPED banks are behavioral objectives. A behavioral objective is a precise statement of desired pupil behavior; it specifies the conditions, including the type of material, to which a student will be exposed, the response activity he will perform under those conditions, and the proficiency he will attain.

This is a behavioral objective:

> Given a short story such as "Stolen Day" by Sherwood Anderson, the student will read the story and list the chief characters and the main events of the story with 95 percent accuracy in 20 minutes.

This specific statement can be contrasted with a more casual objective such as, "The student will demonstrate that he understood a short story he has read." The goal in both cases is understanding or comprehension. However, the behavioral objective gets at comprehension by having the student write down information gained from his reading. It puts understanding on a measureable basis and, in fact, provides a blueprint for the writing of a test item.

The test items derived from a behavioral objective provide the basis for a discrepancy analysis, that is, a comparison of what one hoped would result from instruction and what was actually accomplished. A behavioral objective then is a means of focusing on just what it is one intends to achieve in the process of education.

Writing a behavioral objective is time-consuming as anyone who has tried his hand at it well knows. A bank of objectives, a centralized resource from which to make selections, is a time-saving device. In using a bank, a school district can gain the advantages of defining its curriculum in terms of what it wants its students to be able to do without having to put effort and money into writing objectives from scratch. Additional time and effort can be saved by having, as a centralized resource, pools of test items matched to objectives and a collection of references to instructional materials also matched to objectives. Finally, the time-saving assets of the SPPED banks will be enhanced by their availability through a computer. When stored in a computer, the contents of the banks can be quickly accessed according to the special interests and needs of the user.

The existence of a bank does not impose objectives on a school district any more than it would dictate certain types of testing or recommended certain instructional materials. The reading bank, for example, is <u>not</u> a program of reading instruction,

nor does it advocate any particular approach to reading. The users must make all the decisions about what to teach, what they will evaluate, and what materials they will employ. Furthermore, the user can and should modify the contents of a bank to fit his local situation. Thus local banks, which are the means of organizing objectives, items, and resources for storage and use, will reflect local needs.

The Development of the SPPED Reading Objectives

Concern over the extent of failure in reading and with reading instruction, made reading a priority subject matter area for a SPPED bank.

The development of the reading bank began with a survey of existing collections of reading objectives. This review resulted in the definition of a set of standards for the bank of reading objectives and the selection of a framework or classification structure for reading objectives.

The standards established for the bank were these:

1. It should be comprehensive, covering a variety of approaches to the teaching of reading and as many as possible of the behaviors used to define reading in the school setting.

2. Its component objectives should be behaviorally specific, but should take into account the infinite variety of content that can be used in reading objectives.

3. It should be parsimonious both in the wording of the objectives and in the avoidance of redundancy or the unnecessary repetition of objectives.

To meet these standards, two new types of objectives were created. One, the generic objective (GO), states the type of stimulus material to be given and specifies the student response. The other, a criterion objective (CO), sets a standard of performance on a number of related generic objectives. The generic and criterion objectives

are discussed in detail in chapters 2 and 3.

The framework selected for the reading bank was an early classification system or category structure for SOBE-R, a System for Objectives-Based Evaluation in Reading developed at the Center for the Study of Evaluation, UCLA.[1] SOBE-R met the standard for inclusiveness and provided some 800 objectives which could be used as a starting point for the writing of SPPED objectives. A second source of objectives that were modified to fit the SPPED standards was the Catalogue of Instructional Objectives and Prescriptions[2] for High Intensity Learning Systems.

The SOBE-R and the High Intensity objectives were based on extensive analyses of existing reading curriculums and instructional materials. The nature of these sources in one sense defined the term "reading" for the SPPED bank. Whatever other definitions it may have, reading in the SPPED bank means those activities which educators, curriculum designers, and the authors of instructional materials call "reading" in the elementary and secondary school. In other words, the "reading" objectives describe "reading" behaviors expected of children in the school context.

Over 2200 generic objectives were derived from the two sources cited. Careful editing and the use of a computer program to eliminate redundancies[3] resulted in a final

---

[1] A draft of the SOBE-R User's Guide and Objectives was made available to the State Education Department in October 1971 by Rodney W. Skager, project director. SOBE-R is now known as SOBA-R, a System for Objectives-Based Assessment in Reading.

[2] S. Alan Cohen and Anne Marie Mueser, Catalogue of Instructional Objectives and Prescriptions (New York: Random House, 1971).

[3] SCAN, a System for Coding Analysis developed by S. Alan Cohen and Robert P. O'Reilly, can be used to eliminate duplication, to insure the behavioral specificity of objectives, and to refine and update the bank. For technical information write the Bureau of School and Cultural Research, New York State Education Department.

collection of 1829 generic reading objectives. These generic objectives were clustered into a collection of 301 criterion objectives which were assigned to levels or stages of reading development.

The two collections, the generic and the criterion objectives, make up the current content of the SPPED Reading Bank. A third element, a collection of lists of stimulus materials or content elements to be used in generic objectives, will be added shortly. The writing of test items and the identification of instructional resources are both projects for the future. While the Reading BOIR is thus incomplete, the objectives are an immediate resource for use in curriculum development and by their nature provide a solid base for both the preparation of evaluation measures and for the assessment, or selection, of instructional materials and activities.

The SPPED reading objectives are now available in two paper documents: SPPED Resource 5000, Generic Objectives for the Bank of Objectives, Items, and Resources in Reading, and SPPED Resource 5001, Criterion Objectives for the Bank of Objectives, Items, and Resources in Reading. Both collections, along with the lists of elements, will soon be available by computer. While much of the information presented here will be pertinent to the use of a computerized bank, this manual is written with the currently available paper materials in mind.

Levels in the SPPED Reading Bank

Mention was made in the preceding section of the assignment of criterion objectives to levels or stages of reading development. The concept of levels as used in the bank is an important one, for not only is it a means of organizing objectives, but it also reflects a philosophy about learning to read.

That philosophy is that learning to read is an ongoing developmental process through which individuals may proceed in different ways and at different rates.

The best representation of the process of learning to read would be a series of continuums that suggest these diversities. In teaching a child to read, the critical matter is to determine or diagnose his progress in the continuum and then to prescribe activities and materials that will bring him to the next level of development. Some demarcation of the continuum is needed to indicate progress.

For the reading bank, six levels are suggested and defined in terms of developmental stages. These are:

1. Readiness and Early Learning Stage
2. Intermediate Learning Stage
3. Advanced Learning Stage
4. Early Application Stage
5. Intermediate Application Stage
6. Advanced Application Stage

The three learning stages, levels 1 through 3, are those usually covered by the elementary school program, i.e., the first seven years of schooling (K-6). The three application stages, levels 4 through 6, are the equivalent of the secondary school where reading is used in the study of increasingly difficult subject matter.

The corollary to the concept of developmental levels in reading is the notion of the level of difficulty of reading materials. The beginning reader is given the simplest of reading materials while the most advanced reader, the student who is applying his reading skills in academic study, will have more complex or "difficult" material. Content or reading materials must be rated in terms of the levels for which they are appropriate.

Summary and Recommendations for Use of the Manual

In this chapter, we have introduced the bank of reading objectives and described its development as a part of Project SPPED. In the course of this presentation, three basic concepts of the reading bank have been given: the notion of a behavioral objective with its specification of conditions and standards for a particular student performance, the idea of a bank to be used creatively for local development activities and as a means of organizing the local curriculum, and the perception of levels as a stratification of a developmental reading continuum. With these concepts as a framework, we will now turn to a detailed examination of the contents of the reading bank and its uses.

Having been introduced to the bank, users may wish to vary the order in which they read the remaining chapters. Familiarity with the information on the generic and criterion objectives given in chapters 2 and 3 will be needed by everyone. The procedures for selecting objectives to develop curriculum and relating objectives to instruction presented in chapters 4 and 5 will probably be of greatest interest to curriculum coordinators, reading specialists, and teachers of reading. The discussion of evaluation in chapter 6 will likely be of most interest to those responsible for the design of evaluation, testing, and measurement.

All six chapters of the manual should be read at some time by all persons working in or with an objectives-based reading program in order that they may have a sense of the interrelatedness of curriculum, instruction, and evaluation. However, the manual is not a document to be read at one sitting and set aside. Rather it should be used as a reference and consulted as need arises. The table of contents which notes the subdivisions and topics within each chapter should facilitate the use of the manual in this way.

In using the manual, one should of course, have access to SPPED Resource 5000, the Generic Objectives, and SPPED Resource 5001, the Criterion Objectives. In addition, users may want to have available some of the SPPED publications and training materials listed in Appendix A. Familiarity with these materials, which describe Project SPPED and its applications at length, will add to the overall utility of the reading objectives.

CHAPTER 2

GENERIC OBJECTIVES

The bank of reading objectives was planned as a comprehensive resource, capable of encompassing all different approaches to the teaching of reading. At the same time, it was recognized that it would be impossible to include every possible objective because of the infinite variety of reading material available. This dilemma produced the generic objective or GO.

The Generic Objective Defined

The generic objective is a behavioral objective which is both specific and general. It is specific in that it describes the type of stimulus to be given, states how it will be presented, and limits the student response to a particular behavior. It is general in that it does not cite the specific stimulus material or content to be used. The following is an example of a generic objective:

> Example 1: Generic Objective
>
> Given orally a plural word, the student writes its singular form.

In example 1, the type of stimulus is stated (a plural word), and the student response is specified (the student writes its singular form). However, no specific word is cited; any plural word could be used.

The structure of the generic objective, its style, and certain conventions used in writing GO's will be discussed later in this chapter. First, the relationship between

generic objectives and instructional objectives will be explained.

Generic Objectives (GO's) and Instructional Objectives (IO's)

A generic objective to which specific content materials or elements have been added is an instructional objective (IO). A generic objective is then a skeleton of an instructional objective. Example 2, below, is a generic objective; example 3, below, is an instructional objective, derived from the generic objective.

Example 2: Generic Objective

Given orally two words, the student says if the final consonant sounds are the same or different.

Example 3: Instructional Objective

Given orally the words fat and sit, the student says if the final consonant sounds are the same or different.

The content elements that can be added to the generic objectives include specific letters, words, phrases, sentences, paragraphs, pictures, or selections. By varying the difficulty of the content element, a single generic objective can become an instructional objective at a number of levels. Consider example 4, below.

Example 4: Generic Objective

Given a selection and given a question about a detail in the selection, the student designates the answer.

Example 4 is a generic objective which can be transformed into a specific instructional objective at any level by the addition of material (selections and questions) of appropriate difficulty. For a beginning reader, the selection might be taken from a primer; for a high school senior, the selection might be taken from a book by Herman Hesse. While some generic objectives such as example 4 could be made appropriate for any level of reading development, other objectives, such as example 2 which dealt with letter sounds, might be appropriate only for beginning readers.

The number of instructional objectives to be generated from a generic objective may be limited by the type of material specified. Where the stimulus is a letter of the alphabet, there are only 26 possible elements. With other types of material such as passages of fiction or sentences, the possibilities are almost infinite. It would not be necessary, of course, to write out every objective derived from a generic objective. Once one had determined the level or levels of the curriculum at which the objective was pertinent, one could simply draw up lists of content elements of appropriate difficulty and attach them or cross-reference them to the generic form of the objective.

The reading bank is to provide lists of elements from which a curriculum designer may choose specific content to add to generic objectives to transform them into instructional objectives. These lists of elements will be available in the near future as SPPED Resource 5002. The lists will be arranged by topics such as "final consonants" or "compound words." For each topic, there will be different types of lists--lists of words, sentences, selections, pictures, or whatever content would be required by the objectives. The lists will be cross-referenced to the generic objectives, and the elements will be arranged by difficulty as indicated by the developmental levels

described in chapter 1.

Table 2.1 shows the topics for which content lists will be available.

Table 2.1

Topics Covered by
Lists of Elements for
Generic Objectives

Adjectives	Initial Consonants
Antonyms	Logical Relationships
Classification	Main Ideas
Compound Grammatical Elements	Medial Consonant Digraphs
Compound Words	Medial Consonants
Consonants	Opinion
Contractions	Possessives
Diction	Prefixes
Emotions	Prepositions
Etymology	Propaganda and Persuasion
Fables and Morals	Rhyming Words
Fact and Fantasy	Roots
Figurative Language	Sequence
Final Consonant Digraphs	Singular and Plural
Final Consonants	Skimming and Outlining
Heteronyms	Suffixes
Homonyms	Syllables
Initial Consonant Digraphs	Synonyms
	Symbols and Objects
	Verbs
	Vowels

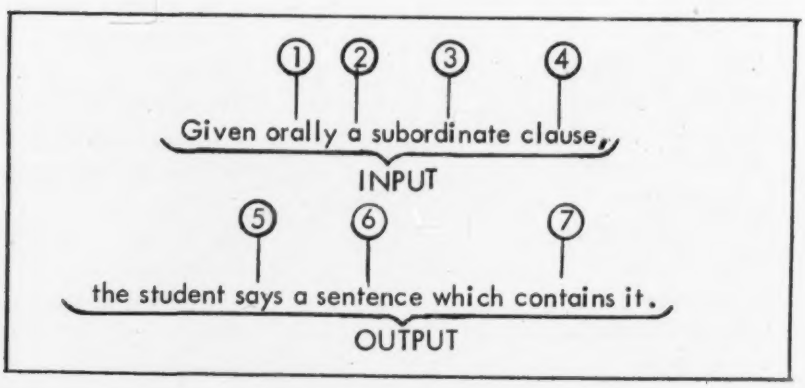
The lists for the topics in table 2.1 will provide material for over 50 percent of the generic objectives. In some instances, a list may cover all possible elements for an objective. More often, a list will exemplify the elements needed and serve as the basic input for a more extensive list to be developed locally to reflect the local context, student needs, student interests, and so forth.

Structure and Components of the Generic Objective

The generic objectives adhere to a standard form or structure with two distinct parts: the stimulus or input and the student response or output. Each part has a number of components as shown in figure 2.1 which follows. The numbered components of the generic objective are briefly defined below. They are discussed in greater detail in conjunction with the style and conventions of the generic objectives.

Figure 2.1

The Structure of a Generic Objective



The Input is the stimulus to which the student is to respond. It prescribes:

1. The mode or manner in which the stimulus is to be presented (here, orally).
2. The number of stimuli to be presented (here, one).
3. A modifier (or modifiers) indicating the special qualities of the stimulus (here, subordinate).
4. The stimulus material or content element (here, a clause).

The Output is the student response. It prescribes:

5. The indicator or observable behavior to be performed by the student (here, the action verb, says).

6. The product or the object of the student response (here, a sentence).

7. A modifier describing or limiting the product expected of the student (here, "which contains it," limiting the acceptable response to a sentence including the subordinate clause given in the stimulus).

Style and Conventions in the Generic Objectives

Beside having a single, consistent structure, the generic objectives are written in a style that is as brief and concise as possible. Certain conventions have been established and a restricted vocabulary has been used with some words carrying special or technical meanings. The conventions and the special vocabulary are noted and exemplified here in connection with the various components of the generic objectives.

Mode

There are four possible modes for presentation of the stimulus material in the generic objectives, plus their various combinations. The four modes are:

1. Visual
2. Oral/Aural
3. Kinesthetic
4. From Memory

By convention, it is understood that any verbal stimulus, (letter, word, sentence, etc.) is to be presented visually--in print--unless otherwise stated. In example 5, below, the visual mode is assumed, and the given word would be printed.

Example 5: Visual Mode Assumed

Given a new word, the student says it.

If a verbal stimulus were to be presented orally, the mode would be noted as in example 6.

Example 6: Oral/Aural Mode Stated

Given orally a word, the student says the number of syllables.

Example 7 shows the treatment of the mode when a verbal stimulus is to be spoken and shown simultaneously. Here, both the oral/aural and visual modes are stated.

Example 7: Oral/Aural and Visual Modes Stated

Given orally and visually a word, the student designates its initial consonant.

The oral/aural mode is unstated when it is prescribed by the stimulus material. In example 8 below, the stimulus--two sounds--can only be presented aurally, so the mode is implied.

Example 8: Oral/Aural Mode Implied

Given two sounds of different volume, the student says which is softer.

Other nonverbal stimuli such as pictures, objects, and books prescribe or imply their mode of presentation. In example 9, a picture implies a visual presentation so that the mode is unstated.

Example 9: Nonverbal Stimulus--Mode Implied

Given a picture, the student says whether it depicts fact or fantasy.

Examples 5 through 9 lead to the general principle that the mode of presentation is implied by the stimulus; verbal stimuli are assumed to be visual, in print, unless the oral/aural mode is stated.

The fourth mode, "from memory," means that the stimulus is not present; the stimulus material was given some time in the past, and the student has to recall it. The introductory words "Given instructions to do so" in a GO usually indicate the "from memory" mode, as in example 10 below.

Example 10: Memory Mode

Given instructions to do so, the student says the alphabet.

Number

The number cited in the input of a generic objective sets the minimum number of stimuli required for the student response. In many cases, only a single stimulus is necessary, and the article a or an is used rather than the number one. In other cases, multiple stimuli would be needed. Consider example 11.

Example 11: Minimum Number of Stimuli

Given orally three or more words, the student says those containing the same medial consonant digraph sound.

Here, at least three words must be given if a child is to differentiate words that sound alike from other words; more words could be used. Where there are multiple stimuli, the number given could affect the difficulty of the objective. Specifying the exact number to be used or raising the minimum number is one aspect of transposing a generic objective into an instructional objective.

Modifier of Stimulus

Most of the modifiers used to describe the stimulus indicate special qualities inherent in the element or content presented. Words like "subordinate" as in "subordinate clause" and "incomplete" as in "incomplete sentence" are of this type.

There are some modifiers which are temporal; that is, they indicate a time relationship between the stimulus and instruction. Consider example 12.

Example 12: Temporal Modifier

Given a familiar word, the student writes a sentence using it.

The term familiar is used here and throughout the bank to indicate that the stimulus element or content has been previously presented in the instructional sequence. The contrasting term, used in example 13, is new.

Example 13: Temporal Modifier

Given a new word, the student locates the word in a dictionary and pronounces it.

New content, here a new word, is material that has not been presented previously in instruction.

Stimulus Material

The stimulus material is the content or thing presented to the student. In the reading objectives, the stimulus may be a letter, a word, a selection, a picture, an object, and so on. Usually the stimulus has special qualities. For example, it may be a word with a silent letter or a story with a moral. In the interests of brevity, many of the generic objectives have been written so that the special qualities of the stimulus must be inferred from the expected student response or output. In example 14, the stimulus word has to be one with a prefix, or the student could not write its prefix.

Example 14: Stimulus Qualities Inferred

Given a word, the student writes its prefix.

In example 15, the stimulus word has to be one that ends with a consonant; it could not be a word like area which ends with a vowel.

Example 15: Stimulus Qualities Inferred

Given orally a word, the student says another word with the same final consonant sound.

Indicator

The indicator is the action verb in the GO; it tells what observable behavior is to be performed by the student. The most frequent indicators in the reading objectives are say, write or write about, and designate.

Designate means "to circle, underline, cross out, or mark one or more of a finite number of choices, leaving a physical record of the choice." A "designate" indicator implies a condition with a limited number of possible answers. The stimulus for a designate response might be a multiple-choice or true/false item, or it might be a sentence or paragraph on which certain types of words or ideas were to be marked.

In some instances, such as example 16, there is more than one verb in the output.

Example 16: Multiple Verb in Output

Given orally a word, the student substitutes a final consonant and says the word formed.

Substituting a final consonant in a word is an action performed by the student to fulfill the objective, but his saying the word formed is the observable behavior by which he may be judged.

Product

The product is the object of the indicator or student behavior. It is what the student says, writes, or designates. In example 17, the product is the paraphrase written by the student.

Example 17: Product

Given a selection, the student writes a paraphrase of the selection.

Modifier of Product

The modifier in the response portion of a generic objective usually describes or limits the product expected of the student. In example 18 below, the modifier "with the same medial consonant digraph" describes the word to be marked or designated by the student.

Example 18: Product Modifier

Given orally a word, the student designates another word with the same medial consonant digraph.

As previously noted, the output modifier frequently defines the qualities of the stimulus material. In example 18, the given word would be one with a medial consonant digraph.

The Thesaurus

Some of the words used in the generic objectives with special or technical meanings have been defined in the preceding paragraphs. Those definitions and others are given in the Thesaurus found in Appendix B of this manual. Users will want to consult the Thesaurus to be sure their interpretations are those intended. Terms not found in the Thesaurus carry their common dictionary meanings.

Classification and Coding of Generic Objectives

The classification system for the generic objectives is made up of six major skill categories. These categories and the code numbers which identify them are shown below in table 2.2.

Table 2.2

Major Skill Categories
and Codes

	Category	Code
I	Multisensory Readiness Skills	001
II	Decoding Skills	002
III	Vocabulary Skills	003
IV	Comprehension Skills	004
V	Location and Study Skills	005
VI	Reading in Content Area Skills	006

Each of these major skill categories has subcategories at one, two, or three levels. The subcategories at each succeeding level identify more specific skills or skill areas within the major skill categories.

The Skill Category Structure is given in its entirety in Appendix C. The layout of the structure follows the pattern of a standard outline with Roman numerals (I, II, etc.) indicating the major categories, capital letters (A, B, etc.) the first level subcategories, and Arabic numbers (1,2, etc.) the second level subcategories. Third-level

subcategories are not marked, and, where there is no third-level subcategory, the second-level subcategories are not numbered. A portion of the structure, which covers Skill Categories I I I and IV, appears in figure 2.2 on page 24. It demonstrates the variation in levels within the major categories and the coding system for the subcategories.

As shown in figure 2.2, Category I I I, Vocabulary Skills, is divided into seven subcategories, A through G. The code number for each of these first-level subcategories has six digits. The first three digits (003) indicate the major skill category; the second three (001,002, 003, and so forth) identify the individual subcategories. Code number 003 003, for example, indicates a Vocabulary Skill dealing with "Words and Context."

Category IV, Comprehension Skills, also shown in figure 2.2, is divided into three level-1 subcategories with 6-digit code numbers.

A. Literal Comprehension	004 001
B. Interpretation	004 002
C. Attitude Towards Reading	004 003

The three level-1 subcategories are each divided into a number of second-level subcategories. Subcategory B (004 002), for example, has 10 level-2 subcategories; their code numbers, following the pattern already established, run from 004 002 001 through 004 002 010. Code number 004 002 008 stands for a Comprehension Skill involving "Interpretation" through the "Evaluation of ideas and information."

Because there is variation in the number of subcategory levels within the major skill categories, the term "lowest level subcategory" will be used in this manual to indicate an end point in the classification structure. Accordingly, "Words and Context" in Vocabulary Skills and "Evaluate ideas and information" in Comprehension Skills would be designated "lowest level subcategories." The generic objectives are subsumed under these lowest level subcategories.

Figure 2.2

A Portion of the Skill Category Structure for Generic Objectives

III.	VOCABULARY SKILLS	003
	A. Incorporate listening and speaking skills into reading vocabulary	003 001
	B. Recognize and use synonyms, homonyms, antonyms, and heteronyms	003 002
	C. Words and context	003 003
	D. Recognize historical origins	003 004
	E. Recognize and use non-literal language	003 005
	F. Recognize denotation, connotation, and nuance	003 006
	G. Use a systematic, continuing method of word study to increase vocabulary	003 007*
IV.	COMPREHENSION SKILLS	004
	A. Literal Comprehension	004 001
	Identify main ideas and major concepts	004 001 001
	Find and relate details	004 001 002
	Recognize sequence of ideas	004 001 003
	B. Interpretation	004 002
	Understand relationships	004 002 001
	Recognize cause and effect	004 002 002
	Make inferences	004 002 003
	Interpret figurative and descriptive language	004 002 004
	Recognize and interpret emotional reactions	004 002 005
	Identify and arrive at conclusions and generalizations	004 002 006
	Compare and contrast information and ideas	004 002 007
	Evaluate ideas and information	004 002 008
	Develop critical reading skills	004 002 009
	Develop oral reading skills	004 002 010
	C. Attitude Toward Reading	004 003
	Take proper care of reading materials	004 003 001*
	Read for enjoyment	004 003 002
	Appreciate reading	004 003 003*
	Relate personally to reading	004 003 004

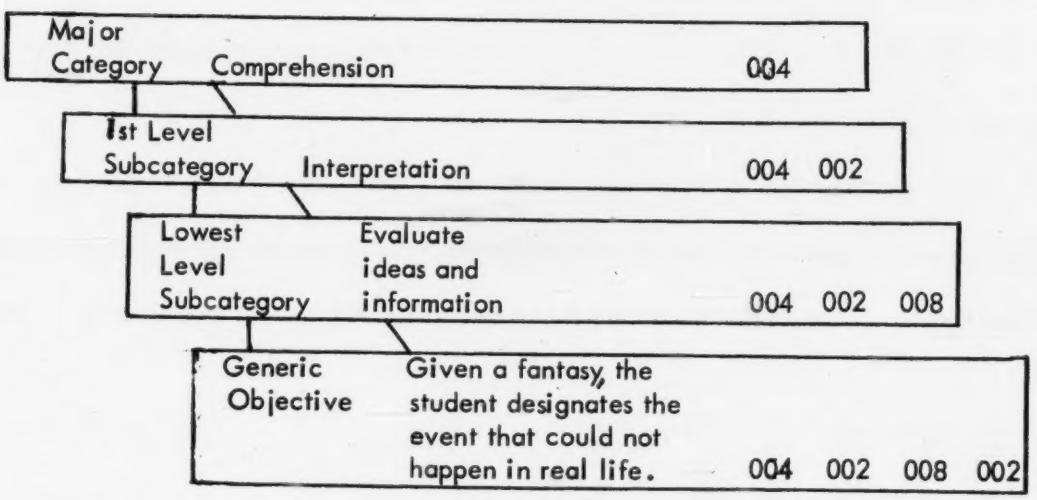
*There are no Generic Objectives in this category.

The numbering of the generic objectives continues the pattern of the classification structure. Each generic objective carries the code number of the major skill category and the subcategories to which it belongs plus another 3-digit number that identifies it as a unique objective in its subclass. For example, the generic objective which reads, "Given a fantasy, the student designates the events that could not happen in real life," is numbered 004 002 008 002. This number indicates that the GO is a Comprehension Skills behavior (004), involving "Interpretation" (002) and, more specifically, calling upon the student to "Evaluate ideas and information" (008); it also indicates that the GO is uniquely identified as number two in its subclass. The unique number of the GO is an arbitrary number, used simply to distinguish one objective from another in the same subcategory.

The relation of a generic objective to a major skill category is diagrammed in figure 2.3 which also shows the development of the code number for the GO.

Figure 2.3

A Generic Objective and
the Skill Category Structure



Presentation of the GO's in SPPED Resource 5000, Generic Objectives for the Bank of Objectives, Items, and Resources in Reading

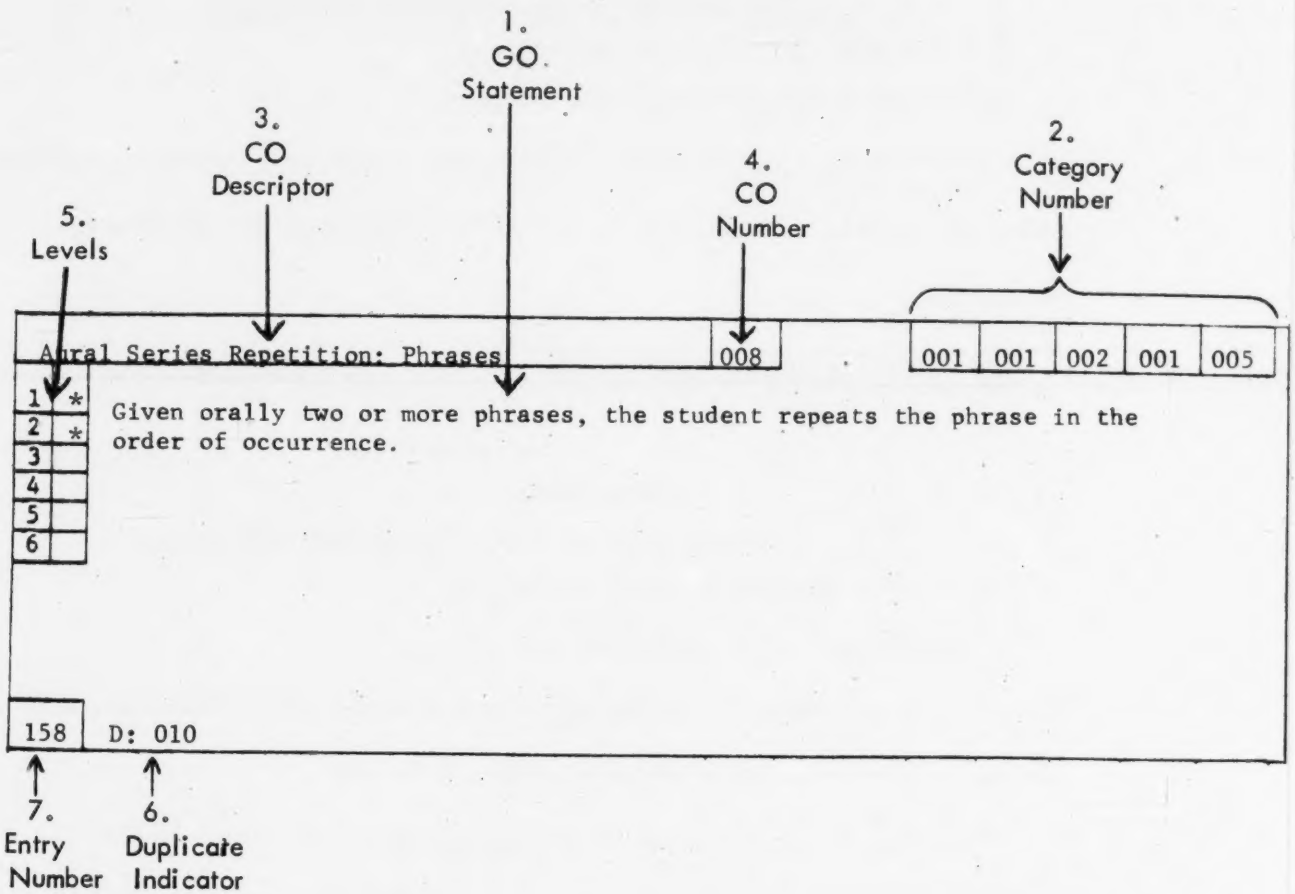
The generic objectives portion of the reading bank is contained in SPPED Resource 5000. The 1829 GO's are presented there, four to a page, in a format designed to provide maximum information in a minimum amount of space. Room is provided for users to make notes as needed. Furthermore, the publication is printed on one side of the page and has been left unbound for ease in handling and duplication. Thus the objectives may be reproduced, rearranged, modified, added to, cut and pasted on cards, organized in file folders or ring binders, compiled in booklets, or manipulated in any other way that meets individual needs.

The objectives are arranged sequentially by code number. They are grouped so that the first-level subcategories in each major skill category start on a new page. Within subcategories there are gaps in number sequences because some objectives were eliminated in editing. In subcategory 002 004 006, for example, the unique numbers run 046, 047, 049, and 053. The first GO in the entire collection is numbered 001 001 001 001 003. Objectives are repeated when they are associated with more than one criterion objective.

The format of a generic objective is shown in figure 2.4. The contents of the format have been identified and are defined below. This material warrants careful study, for familiarity with the GO format will facilitate utilization of the objectives.

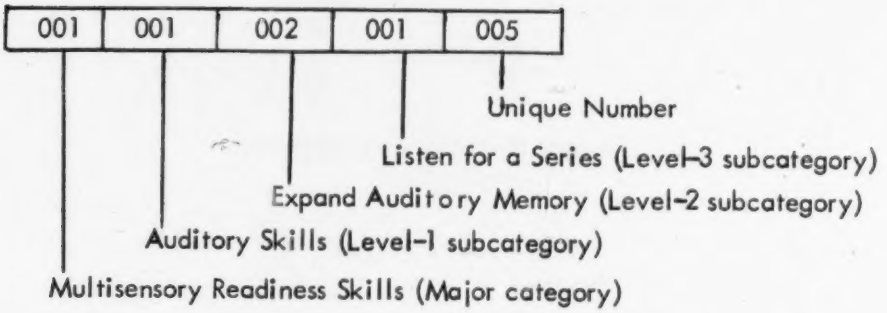
Figure 2.4

Format for a Generic Objective

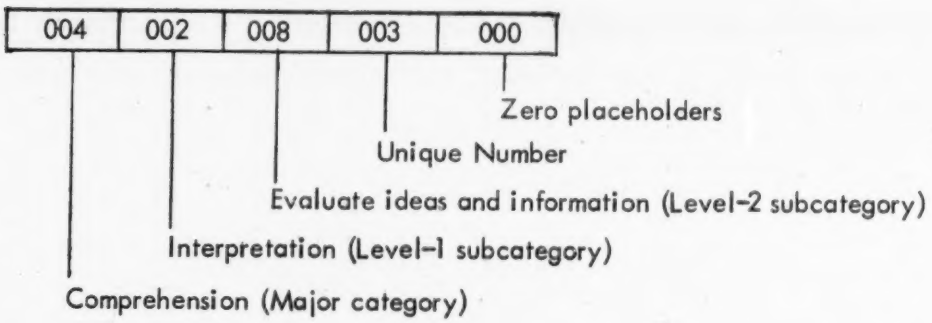


1. GO Statement: This is the generic objective. It specifies the type of material to be presented as a stimulus (input) and the expected student behavior (output).

2. Category Number: This 15-digit code number is the chief means of identifying the generic objective. It shows the major skill category and the subcategories to which the objective belongs. The final digit, exclusive of zero placeholders, identifies the objective as a unique entry within its class. The category number in the sample format may be interpreted as follows:


001 001 002 001 005
Unique Number
Listen for a Series (Level-3 subcategory)
Expand Auditory Memory (Level-2 subcategory)
Auditory Skills (Level-1 subcategory)
Multisensory Readiness Skills (Major category)

Where there are two subcategory levels within a major skill category, the unique number will come in the fourth position and will be followed by zero placeholders. For example:



With only one subcategory level, the unique number would occur in the third position, and there would be two sets of zero placeholders at the end.

The category number may be abbreviated by dropping all zeros. Number 001 002 002 001 007 would then be referred to as 1-2-2-1-7 and number 004 002 008 003 as 4-2-8-3.

3. CO Descriptor: The CO Descriptor is a brief phrase indicating the content of the criterion objective with which the GO is associated. Criterion Objectives (CO's) are fully explained in chapter 3 of this Training Manual.

4. CO Number: This is the three-digit number of the criterion objective with which the generic objective is associated.

5. Levels: The asterisks indicate the developmental levels at which the GO might be appropriate. (See chapter 1 for discussion of levels.)

6. Duplicate Indicator: This item appears only on those GO's that are associated with more than one CO. D shows that the GO appears more than once. The number given is that of the other criterion objective with which it is associated. A GO associated with three or more CO's would show two or more CO numbers here.

7. Entry Number: The entry number is an alternate way of identifying a unique objective. The entry numbers run consecutively from 1 to 1829 and show the order in which the objectives appear in the reading bank; they have no other significance.

While the category number of an objective might change as a result of local adoption of a different classification system or the assignment of the objective to a different category in the existing system, the entry number is a constant. It may be used so that there can be followup on an objective regardless of how it is classified or modified.

Summary

This chapter has described the generic objectives and their presentation in SPPED Resource 5000. The GO's are the basic units in the reading bank. They are complemented by the criterion objectives, the second portion of the bank to be described in chapter 3.

CHAPTER 3

CRITERION OBJECTIVES

Generic objectives and the innumerable instructional objectives that can be derived from them, do not specify the proficiency to be attained by the pupil. The criterion objective (CO) was created to fill this void and to aid in organizing GO's.

The criterion objective is defined as an objective which sets a standard of performance on a group of related generic objectives. It may be variously conceptualized as a course objective, a major objective for a particular level in the reading program, or as a unit objective. A criterion objective would be achieved after some period of time during which the pupil would have received instruction pertinent to the related generic objectives.

To prepare the criterion objectives for the SPPED bank, the generic objectives were systematically examined and clustered together on the basis of common content, common student responses, or association in a learning sequence. Association in a learning sequence means that the objectives could be regarded as a series of steps leading to the most difficult of the behaviors in the cluster.

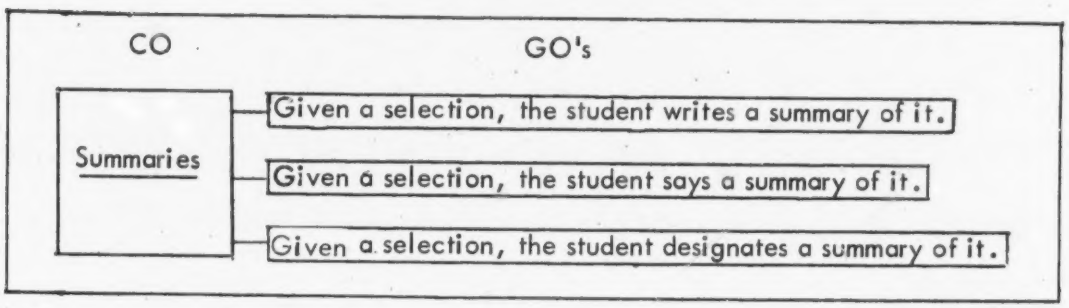
Each cluster of GO's was then identified by a criterion descriptor, a succinct label such as "Following Directions" that pinpointed the content, response, or end behavior. The clustering activity resulted in a list of 301 criterion descriptors covering all of the 1,829 generic objectives. Some CO's had only a single generic objective, while others had as many as 20 or 25. Most frequently, CO clusters had 3 to 10

associated generic objectives. Some of the GO's were included in more than one CO cluster.

The outcomes of the clustering and labeling activity are typified by figure 3.1 which presents a CO and its cluster of related GO's.

Figure 3.1

A Criterion Objective Descriptor
with Its Cluster of Generic Objectives


CO
GO's
Summaries
Given a selection, the student writes a summary of it.
Given a selection, the student says a summary of it.
Given a selection, the student designates a summary of it.

The criterion descriptors are an alternate means of classifying objectives. As classifiers, the criterion descriptors are similar to the subcategory labels of the generic objective category structure. However, the systems are not completely parallel. In some cases, a CO descriptor covers all of the GO's in a subcategory and may even have the same wording. For example, the CO cluster called "Newspapers" contains all 8 objectives in skill category 5-3-3 which is "Newspapers." In other cases, a criterion descriptor represents a subdivision of a skill category. Thus the 18 generic objectives in the skill category "Distinguish Among Sound Characteristics" (1-1-1-4) are divided among three CO clusters--"Sounds: Intensity"; "Sounds: Pitch"; "Sounds: Duration." In still other cases, the CO cluster brings generic objectives together by cutting across the subcategories and even the major categories of the skill structure. The criterion objective with the descriptor "Directions: Oral" draws objectives from a "Multisensory

Readiness" subcategory, "Recall and Follow Directions" (1-1-2-2), and from a "Location and Study Skills" subcategory, "Follow Directions" (5-4-1).

Two types of criterion objectives were written for the criterion clusters: a sampling objective and a summative objective. The sampling type was used for 259 of the CO descriptors; summative objectives were prepared for the 42 other CO's.

The Sampling CO

A sampling CO sets the standard of performance on a cluster of generic objectives at a given level by specifying the number of inputs or items on which the student is to be tested, the proportion of correct responses required, and the time allowed for the responses. The framework or skeleton statement for all sampling CO's is shown in figure 3.2.

Figure 3.2

Skeleton Statement for a Sampling Criterion Objective

> Given ____ samples of inputs from (Criterion Descriptor), the student shows mastery at level ____ by generating at least ____% correct outputs in ____ seconds.

The sampling CO gets its name from the fact that mastery is determined by performance on a sample of test items specifically written for instructional objectives derived from the associated generic objectives. How large a sample of test items, what proportion must be answered correctly, and within what time period are all matters to be determined by the user of the objectives. Users must also decide which of the objectives in a CO cluster will be included in their curriculum and which will be evaluated by testing. These latter decisions are discussed further in the chapters on

"Building a Curriculum" and "Evaluation."

The proportion of correct answers required on a sampling CO will vary with the type of material or content in the objective. A CO dealing with alphabet recitation requires 100 percent accuracy. On a CO dealing with main ideas, 75 percent accuracy might be acceptable. Curriculum designers may vary the performance standards in accord with the capacities or abilities of their students. An advanced or very bright student might be expected to work at 95 percent accuracy while a slower student, doing the same work, might be required to achieve only 80 percent accuracy.

The Summative CO

The summative CO is a traditional behavioral objective. That is, a summative objective is a precise behavioral statement with a given (input), a student response (output), and a standard of performance. The standard of performance for a particular level is determined by the user. The assumption is made that the ability to perform the specific behavior of a summative CO indicates that the student has mastered or would be able to perform any instructional objective derived from each of the generic objectives associated with that CO. "Any instructional objective" means, of course, any IO with content elements appropriate for the level of reading development at which the student is working. The CO for "Manuscript Letters: Case Correspondence" shown in figure 3.3 on the following page demonstrates a summative objective.

The child who is able to perform the task in figure 3.3 with a specified number of letters, within a specified time, and at a specified level of proficiency presumably would be able to perform instructional objectives derived from the generic objectives associated in the CO cluster.

Figure 3.3

A Summative Criterion Objective

> Given, in random order, ____ letters in upper and/or lower case manuscript, the student points to the corresponding upper or lower case form of each letter on a manuscript alphabet chart, in a total time of ____ seconds with ____% accuracy.

The associated generic objectives covered by the descriptor "Manuscript Letters: Case Correspondence" are listed below:

GO's for Criterion Objective on Manuscript Letters: Case Correspondence

Given a manuscript letter, the student points to its corresponding upper or lower case form.

Given a manuscript letter, the student says whether the letter is upper or lower case.

Given an upper or lower case manuscript letter, the student points to the letter on a manuscript alphabet chart.

Given an upper case manuscript letter, the student points to its corresponding lower case form (in any context).

Given a lower case manuscript letter, the student points to its corresponding upper case form (in any context).

The "Manuscript Letters: Case Correspondence" CO is suggested for the first two levels of reading development. It might appear several times in a curriculum with different or expanding groups of letters as content.

In some summative objectives, reference is made to the stimuli of some or all of the associated GO's. For example, the summative objective for "Outlining" reads:

Given a lecture, a reading selection, and/ or a topic for a written or oral report, the student writes an outline(s) with major topics and subtopics, as appropriate, in a specified time. Teacher criterion.

The three stimuli of this summative objective are mentioned in the first three of the generic objectives in the CO cluster given below; the ability to prepare an "appropriate" outline to meet the teacher criterion would involve being able to perform the other objectives in the cluster.

GO's for Criterion Objective on Outlining

Given a lecture, the student writes an outline from notes taken during the lecture.

Given a selection, the student writes an outline of it.

Given a topic, the student writes an outline for a written or oral report of it.

Given a selection and given two or more major topics, the student writes two or more subtopics for each topic.

Given a selection and given two or more major topics, the student designates two or more subtopics for each topic.

Given instructions to do so, the student writes a skeletal outline showing the kinds of letters and numbers and the way they are used in an outline.

Given instructions to do so, the student writes about the uses and values of outlines as study aids.

Given instructions to do so, the student says the uses and values of outlines as study aids.

Given a selection and given an outline, the student designates whether or not the outline fits the selection.

Some summative CO's refer to all of the outputs mentioned in their associated GO's. This is demonstrated by the CO on "Verbal Expression: Oral" which reads:

The student shows mastery of Verbal Expression by orally telling a familiar story, a fantasy, or a personal experience in his own words. Time limit: ____ seconds. Teacher criterion.

The three generic objectives associated with this CO are these:

GO's for Criterion Objectives on Verbal Expression

Given instructions to do so, the student tells a personal experience.

Given instructions to do so, the student tells a fantasy with himself as the central character.

Given instructions to do so, the student says a familiar story in his own words.

The expression "teacher criterion" is sometimes used in the CO's to indicate those instances in which the teacher must spell out the bases on which she will make her evaluation of pupil performance. While summative CO's are more specific than sampling CO's, they do not take away the users' responsibilities for determining standards and defining expectations for their students in their local situations.

Sampling vs. Summative CO's

The decision as to whether a sampling objective or a summative objective should be used for a cluster of generic objectives was made by the writers of the objectives. These decisions were based on their perceptions of the interrelatedness and interdependence

of reading behaviors. Summative objectives were not written unless the writers were convinced that the ability to perform one behavior was dependent upon, or indicative of, the ability to perform all of the associated behaviors.

Users of the objectives may not agree with the decisions of the writers. In some cases they may prefer to substitute a sampling objective for a summative objective. In other cases, they may want to modify a given summative objective or to write their own summative objective to replace a sampling objective.

The criterion objectives should be examined critically and adapted to local perceptions and needs.

Presentation of the CO's in SPPED Resource 5001, Criterion Objectives for the Bank of Objectives, Items, and Resources in Reading

The 249 sampling criterion objectives in the SPPED bank follow a standard pattern in which the only variant is the criterion descriptor or label for the related GO's. In order to eliminate undue repetition, SPPED Resource 5001 consolidates the sampling and the summative CO's in an extended 35-page chart. This chart lists the 301 descriptors for the CO's; gives their identifying numbers; indicates their type or form, i.e., Sampling or Summative; indicates the level at which the writers of the objectives deemed them appropriate; and shows the generic objectives with which they are associated. A portion of the Criterion Objectives: CO-GO Correspondence Chart appears in Figure 3.4 page 38 . The columns of the chart are identified and described below.

Figure 3.4

Sample Page From the
Criterion Objectives: CO-GO Correspondence Chart
From SPPED Resource 5001

① CO Number	② Form	③ Criterion Objective Descriptor	④ Level of Appearance 1	2	3	4	5	6	⑤ Associated Generic Objectives: Skill Category	Unique Number
032	A	Aural Comprehension: Cause and Effect	*	*					001 002 001 007	1, 2, 3, 4, 5, 7, 8, 6
									001 002 001 003	6
033	A	Oral Vocabulary: New Words	*	*					001 002 001 008	1, 2
034	B	Verbal Expression: Oral	*	*					001 002 001 009	3, 2, 1
035	A	Consonant Sounds: Initial	*	*					001 002 002 001	3, 12, 1, 5, 7, 9, 10
									001 002 002 004	4
									001 001 001 001	9
									002 002 001 ---	18
036	A	Consonant Digraph Sounds: Initial	*	*					001 002 002 001	4, 13, 2, 6, 8, 14
									001 002 002 004	3
									001 001 001 001	9
037	A	Consonant Digraph Sounds: Final	*	*					001 002 002 002	13, 4, 2, 8, 6, 11, 9
									001 002 002 004	12
									001 001 001 001	10

Content of the Criterion Objectives: CO-GO Correspondence Chart

Column 1 CO Number--This is the identification number for the Criterion Objective.

Column 2 Form--An A in this column shows that the objective is a sampling objective. B indicates a summative objective.

Column 3 Criterion Objective Descriptor--This is the label which tells the nature of the material and/or skill or behavior covered by the associated GO's.

Column 4 Level of Appearance--Asterisks in the subdivisions of this column show at which of the six stages of reading development the criterion objectives have been judged appropriate by the writers of the objectives.

Column 5 Associated Generic Objectives--The last column shows the numbers (skill category number and unique number) of all of the generic objectives clustered together for a particular criterion objective.

Column 5 requires some additional explanation. To avoid unnecessary repetition, the GO numbers are divided into two parts. The "Skill Category" code portion of the GO number appears first; it is followed by the unique number which is given with the unique numbers of all the associated GO's in that category. For example, the chart shows that there are two GO's associated with CO 33, "Oral Vocabulary: New Words." Both are in skill category 001 002 001 008. Their unique numbers are 1 and 2. In the GO collection, the identification numbers for these objectives would be 001 002 001 008 001 and 001 002 001 008 002.

The GO numbers are arranged to suggest the relative difficulty of the GO's; the most difficult are cited first. In some cases, GO's from different skill categories are interspersed in a sequence so that a skill category code appears more than once.

The CO's themselves are arranged according to the lowest skill category number of the associated GO's. CO 33, for instance, refers to GO's in skill category

1-2-1-8; CO 34 refers to GO's in 1-2-1-9. Thus the arrangement of the CO list follows fairly closely the skill category structure.

Following the Criterion Objectives Chart in SPPED Resource 5001 is a page of formats to be duplicated and used for writing out sampling criterion objectives and specifying standards of performance. A blank format and a completed format are shown in figures 3.5 and 3.6 on page 41 . In this case, most of the information on the completed CO was taken directly from the Criterion Objectives Chart; performance and time standards represent hypothetical decisions by the user. In practice, a completed CO would be more the product of local decision making than is this example.

The corresponding sections of the blank and completed formats in figures 3.5 and 3.6 have the same numbers and labels. The labels, which indicate the information to appear in the various sections, are defined below and referenced to the columns of the Criterion Objectives Chart.

Sections of Sampling Criterion Objective Format

1. Criterion Objective Descriptor--The label for the associated GO's (Column 3 of CO chart).

2. CO Number-- The identification number of the Criterion Objective (Column 1 of CO chart).

3. CO Statement--In figure 3.5 , the skeleton statement for the sampling objective. In figure 3.6, the completed statement to which has been added a criterion descriptor and performance standards (number of items, proportion correct, and time allowance) for a particular level of the curriculum (Column 2 of CO chart shows an A for a sampling objective).

4. Levels--The level of the local reading curriculum at which the criterion objective is considered appropriate (Column 4 of CO chart).

Figure 3.5

Blank Format for a Form A, Sampling Criterion Objective

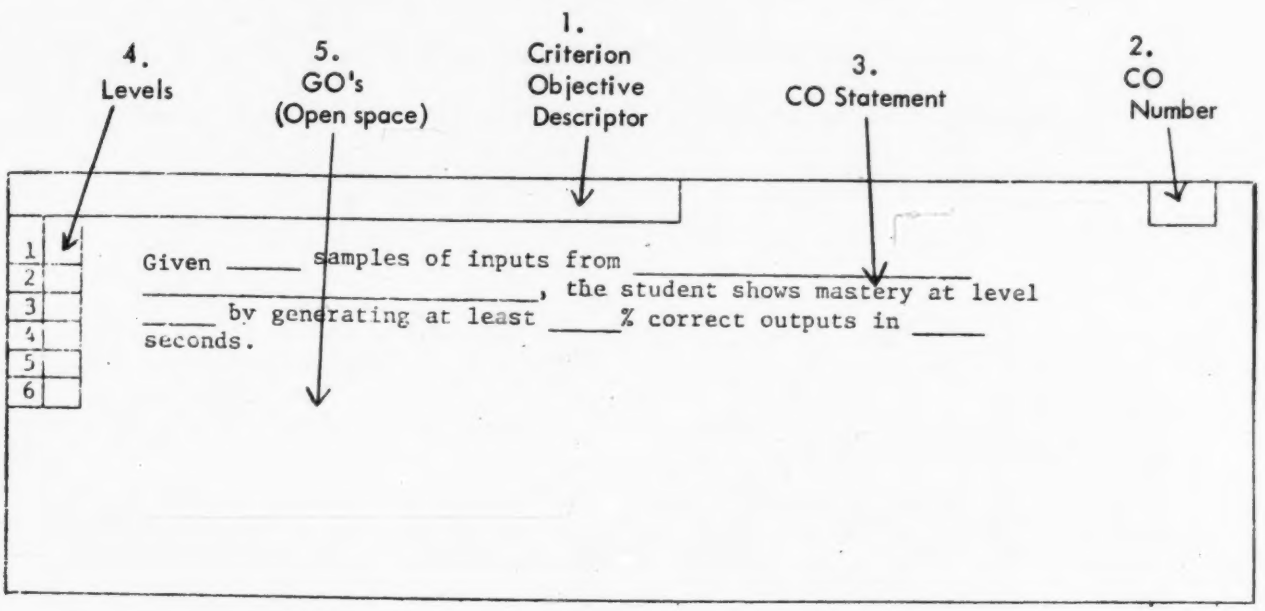
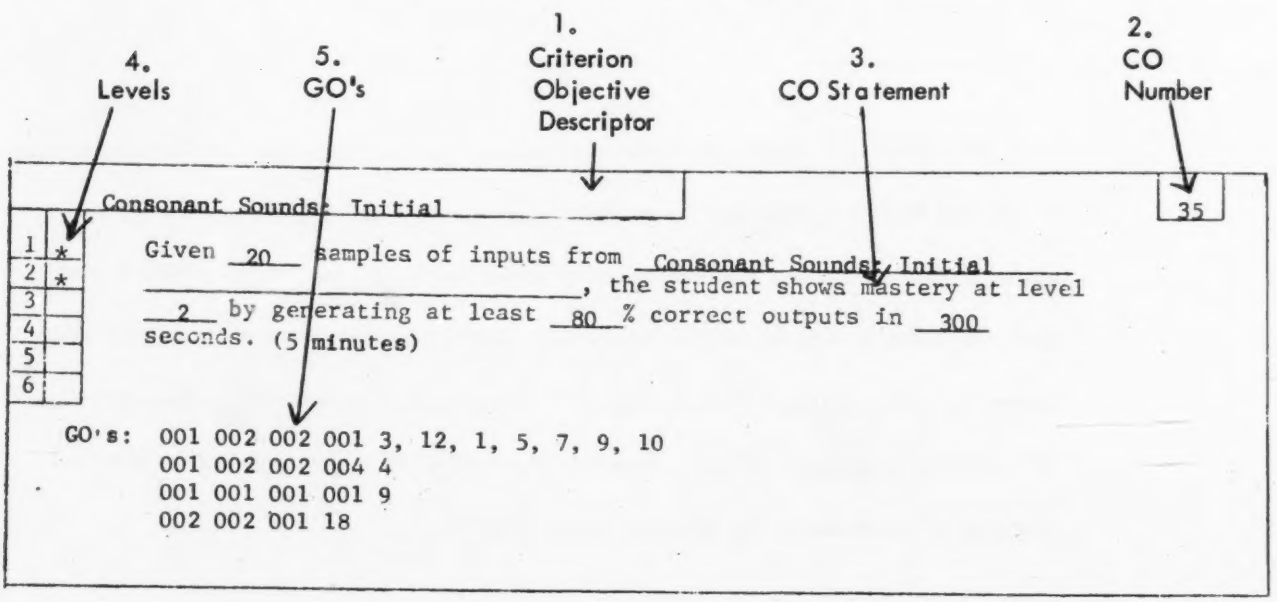


Figure 3.6

Completed Form A, Sampling Objective Format


4. Levels
5. GO's
1. Criterion Objective Descriptor
3. CO Statement
2. CO Number
Consonant Sounds: Initial
35
1 *
2 *
3
4
5
6
Given 20 samples of inputs from Consonant Sounds: Initial, the student shows mastery at level 2 by generating at least 80 % correct outputs in 300 seconds. (5 minutes)
GO's: 001 002 002 001 3, 12, 1, 5, 7, 9, 10
001 002 002 004 4
001 001 001 001 9
002 002 001 18

5. GO's--In figure 3.5, open space. In figure 3.6 the generic objectives that would be used for the formulation of instructional objectives at the level specified in the CO statement (Column 5 of CO chart--Associated GO's).

In the last section of SPPED Resource 5001, each of the 42 summative criterion objectives is printed out in its entirety in a format similar to that for the sampling objectives. A summative objective is shown below in figure 3.7,

Figure 3.7

Summative Criterion Objective
(Form B)

Verbal Expression: Oral 034

1	*
2	*
3	
4	
5	
6	

The student shows mastery of verbal expression by orally telling a familiar story, a fantasy, or a personal experience in his own words. Time limit: _____ seconds. Teacher criterion.

GO's: 001 002 001 009 : 3, 2, 1

The formats for sampling criterion objectives and the summative criterion objectives are printed four to a page like the generic objectives so that they too may be cut apart, pasted on file cards, and manipulated in different ways. SPPED Resource 5001 is also unbound so that it may be readily duplicated. Multiple copies or versions of both the summative and sampling criterion objectives will probably be wanted by users as the CO's will be assigned to different levels in the curriculum and may prescribe different standards of performance for different groups of pupils.

The final item in SPPED Resource 5001 is an alphabetized index of the CO descriptors. It may be used as a topical guide to locate CO's and their associated GO's in the Criterion Objectives Chart.

Summary

This chapter has completed the introduction of the reading bank by describing the criterion objectives and their arrangement in SPPED Resource 5001. Now that both the generic and criterion objectives have been explained, we are ready to consider how they may be used in building a curriculum, and their significance for instruction and evaluation.

CHAPTER 4

BUILDING A READING CURRICULUM

Having introduced the generic and criterion objectives and the notion of developmental levels or stages in reading, we now turn to the task of building a reading curriculum.

Curriculum, as defined for this context, consists of the intended outcomes of instruction. A reading curriculum would be a set of statements describing the behaviors students should be able to perform after reading instruction has taken place. These behaviors may be short-term objectives dealing with readiness and decoding skills or they may be long-term objectives describing lifetime activities such as reading novels or getting information from newspapers. Similarly, curriculum objectives may be descriptions of minute operations such as designating the final consonant of a word or they may be broad goal statements such as, "The student will be able to read so that he can acquire and maintain a job."

Building a reading curriculum involves selecting and ordering or sequencing objectives. It requires, first, considering the long-term, broad outcomes and then identifying the short-term day-to-day and year-to-year instructional objectives that will lead to their attainment. The GO's and CO's included in the bank constitute much of the information needed to define the several levels of objectives needed for a reading curriculum.

To use the objectives for curriculum building one must have a way of screening and examining them. Three alternate ways of selecting objectives are presented in this chapter:

1. The Skill Category method which uses the skill structure of the reading bank and the generic objectives,

2. The Criterion Objective method which makes use of the Criterion Objectives: CO-GO Correspondence Chart.

3. The "Do-It-Yourself" method.

All three methods involve assigning objectives to levels and weighing their importance. The three selection procedures are followed by discussions on sequencing objectives, translating generic objectives into instructional objectives, and banking objectives. Before these various aspects of curriculum building are considered, some overall comments on organizing for curriculum development are in order.

Organizing for Curriculum Development

Curriculum development is no easy job. Even with a bank of objectives to draw upon, defining a curriculum is an exacting task, requiring the best efforts of a number of people. However, the whole idea of a school district or a school deriving its own curriculum rests on the premise that direct involvement, with school personnel selecting objectives for the students with whom they are familiar, will contribute to improved instruction and better student performance. Such results should be worth the effort.

Here then are some guidelines for organizing for curriculum development:

1. Priority--Let the school district give curriculum development priority or do not undertake it.

2. Management Responsibility--Assign responsibility for management of the curriculum development project to one individual who will have status and know-how. (Likely candidates for the managerial position are assistant superintendents for instruction, curriculum coordinators, reading coordinators, and evaluation specialists.)

3. Time for Management--Give the project manager adequate time to do the job. (Managing a curriculum development project cannot be an afterthought in an already crowded schedule.)

4. Representation--Let the overall planning of the curriculum development project be done by a committee representative of all persons concerned with the reading curriculum. This may mean involving members of the community at large as well as school personnel.

5. Teacher Involvement-- Be sure that teachers--those who will eventually implement the curriculum--are involved in its development.

6. Articulation-- Provide for articulation of the curriculum across levels by having represenatives from all levels participate in the development process. (Even when a curriculum committee is concentrating on one segment or span of an instructional program, inputs from other levels are essential.)

7. Committee Size--Keep the size of committees reasonable for the job they are to do. A policy committee may be larger than a working committee. As the work develops, subcommittees may be formed for particular tasks. For example, a subcommittee might select objectives for a particular skill area or level of the reading curriculum and submit their choices for review by a larger group.

8. Communication--Maintain communication between the curriculum development committee and other school personnel and among any subcommittees that are formed.

9. Committee Time--Provide time for committee work either within the school day or in special workshops when school is not in session. (Summer and vacation workshops are an added expense but permit a concentration of effort not always possible when teaching duties conflict.)

10. Ongoing Activities--Be sure that the curriculum project does not die when the committee has completed its work. A curriculum is never a finished product. Make provisions for feedback from teachers, for evaluation of how adequate the curriculum is, and for making changes on the basis of experience.

The exact organizational pattern to be followed in curriculum development will vary from district to district. In some locales, curriculum development will be done on a districtwide basis, in others it will be done within schools. It would be possible for a district to have a set of goals or broad objectives, and then to have individual schools draw up their own instructional objectives for attaining those goals. Even within schools, there might be alternate sets of objectives reflecting alternative approaches to the teaching of reading. Each of these situations would require different committee structures.

Whatever committee structure is decided upon, the most critical considerations are involvement and articulation across levels. The latter is important not only because the objectives for one level must be compatible with those at the next level, but because the teacher whose class assignment identifies her with a particular grade will probably have students at many different stages of reading development. Participating in a project that considers the total span of the reading curriculum should help the teacher in meeting the varied needs of the pupils in her own class.

Finally, when a curriculum development project is launched, time should be provided at the outset for defining the task. Initial agreement as to the focus of the

project--seeing it in relation to the total school curriculum and being aware of the long range purposes it will serve--will smooth the way for the work to be done.

Once a working organization has been set up and its purpose defined, the curriculum developers should establish a procedure for reviewing and selecting objectives, translating generic objectives into instructional objectives, and for sequencing objectives.

Procedures for Selecting Objectives

As noted earlier, three possible ways of selecting objectives will be described: the skill category method, the criterion objective or CO method, and the "do-it-yourself" method. There are undoubtedly other ways of accessing the objectives, and curriculum planners should first acquaint themselves with the general format of the bank so that they can adopt the procedure or the combination of procedures with which they will be most comfortable.

The Skill Category Method

The Skill Category method for selecting objectives makes use of a chart which incorporates skills, levels, and an indicator of the importance of the skill area. The skill category structure itself offers a framework for organizing objectives.

The "Chart for the Selection of Reading Objectives" and the Skill Category Structure appear in SPPED Resource 5000 with the generic objectives. The Skill Category Structure is also found in Appendix C of this Manual. The Resource 5000 material may be readily duplicated so that all committee members will have copies.

The steps to be followed in using the skill category method are these:

1. Set the Scope of the Activity

Determine the scope of the curriculum effort; e.g., a full reading program for both elementary and secondary school or the minimum essentials for learning to read in the elementary school.

2. Select Skill Categories

Review the entire skill structure checking those categories and subcategories which are believed to be pertinent. For this first review, keep the broad picture in mind; concentrate on what skills are necessary, not when they will be learned.

If a major category (I) or a first level subcategory (A, B, etc.) is not considered important, the review could stop at that point. However, further reading of the skill outline may give a better understanding of the category contents, or one subcategory might be pulled out and incorporated under another topic. The skill categories are not inviolate. They can be shuffled around to fit the perspectives of the curriculum planners.

3. Verify Content of Categories

Having selected skill categories, locate their GO's by category number to verify that the content is what was anticipated.

Eventually, the GO's will be studied in detail; this is a quick spot-check on the nature of the objectives.

4. Assign Categories to Levels

Assign skill categories to levels using the Chart for the Selection of Reading Objectives from SPPED Resource 5000.

As shown by the sample section below, the Selection Chart concentrates on the lowest levels of the category structure. The "Skill Category" column at the left of the chart lists the lowest level subcategories in the order they occur in the skill structure; their code numbers are given so that they be immediately related to the major skill categories and their subdivisions.

Figure 4.1

Portion of the Chart
for the Selection of Reading Objectives
in SPPED Resource 5000

Skill Category		Level of Reading Development					
		1	2	3	4	5	6
5-1-9	Appendix.	E S N I	E S N I	E S N I	E S N I	E S N I	E S N I
5-1-10	Introduction	E S N I	E S N I	E S N I	E S N I	E S N I	E S N I
5-1-11	Overviews.	E S N I	E S N I	E S N I	E S N I	E S N I	E S N I
5-1-12	Summaries.	E S N I	E S N I	E S N I	E S N I	E S N I	E S N I

The selection chart includes six columns for the six levels of reading development described previously in this manual. These levels may be redefined according to local practice, and levels may be added or substracted so that their number conforms to the local situation. The letters in each column (E, S, N, I,) are to be used by the curriculum committee to indicate whether the skill category is "Essential," "Supplementary," "Not Appropriate," or "Irrelevant to Reading"

at the level in question.

Definitions for the ratings are given below. These definitions, like other aspects of the reading objectives, may and should be modified so that they are of maximum utility to the users.

> E--Essential--a skill which every student must acquire or be able to demonstrate, and on which he will be tested.
>
> S--Supplementary--a skill needed by some students to attain an essential skill, or a skill offered as enrichment to pupils who have attained essential skills. Testing depends on the purpose for which the skill is acquired. Identifying a skill as supplementary at a particular level takes into account individual differences in experience and proficiency brought to the task.
>
> N--Not Appropriate at this level--a skill that is relevant to the reading process, but not at the level in question.
>
> I--Irrelevant to Reading--a skill that may have a place in the school curriculum, but is not the responsibility of the reading teacher.

Attention will probably focus on the "Essential" and "Supplementary" ratings, but using all four will ensure that a skill category is considered at every level. Subcategories which were eliminated in the preliminary review of the classification structure can be crossed out on the Selection Chart before level assignments are made.

5. Select Generic Objectives

Using the code numbers for the categories, locate the related generic objectives in SPPED Resource 5000. Examine each objective in turn and determine whether it is to be included in the curriculum.

The criterion for selection should be the contribution the particular GO can make to the child's acquisition of the skill to which it pertains. The judgment exercised in the selection of objectives will rest on the pooled experience and knowledge of the working committee. As GO's are selected, some attention should be given to the content that will be added to transform them into instructional objectives. Referring to the content lists for the GO's contained in SPPED Resource 5002 may also be a helpful step in the GO selection task.

The following excerpt from the selection chart demonstrates how it would be used in the skill category method. Here some subcategories have been crossed out as they were considered not pertinent in the preliminary review of the classification structure.

Figure 4.2

Portion of Chart for
Selection of Reading Objectives Used
in Curriculum Building

Skill Category	Level of Reading Development				
	1	2	3	4	5
2-2-18 Letter(s) Sound Correspondence	(E) S N I	(E) S N I	E S (N) I	E S (N) I	E S (N) I
~~2-3-1 Recognize regular spelling patterns~~	~~E S N I~~	~~E S N I~~	~~E S N I~~	~~E S N I~~	~~E S N I~~
~~2-3-2 Recognize variant spelling patterns~~	~~E S N I~~	~~E S N I~~	~~E S N I~~	~~E S N I~~	~~E S N I~~
2-3-3 Apply phonic generalizations	E S N I	E S N I	E S N I	E S N I	E S N I

Let us suppose the subcategory under consideration is 2-2-18, "Letter(s)/Sound Correspondence." This skill is certainly relevant to reading; but it would be an essential

objective in only the beginning and possibly the intermediate stages of learning to read. Accordingly, in the above figure the E has been circled at levels 1 and 2; the N for "not appropriate at this level" has been marked for the remaining stages.

Now consider some other skill categories that do not appear on the sample. A subcategory such as 4-1-2, "Find and Relate Details," is one that would probably be marked "Essential" at all levels. On the other hand, a subcategory such as 2-1-5, "Cursive Letters:Writing," might be considered by some teachers as "irrelevant to reading" and would be marked I at all levels.

Difficulties could arise if it were agreed that a particular subcategory, say 2-3-4, "Apply Rules of Punctuation and Capitalization," was relevant to reading but there was no level at which it was considered an essential objective. Suppose teachers of beginning and intermediate readers did not make a point of teaching punctuation and capitalization, while teachers of advanced students assumed that it had already been learned. Such a situation would necessitate decision making about the importance of the skill and the level at which it should be taught. This exemplifies the necessity for articulation between levels.

The CO Method

The criterion objective method for selecting objectives makes use of the Criterion Objectives: CO-GO Correspondence Chart found in SPPED Resource 5001.

As has been noted elsewhere, the CO descriptors, which are listed in the chart, are a kind of classifier. They describe a group or cluster of related GO's. The advantage of the CO method is that it incorporates the clustering of objectives within levels and the setting of standards for mastery in the selection process. Clustering the

GO's into mastery groupings would be another step that would have to follow the selection of generic objectives by the skill category method.

The steps to be followed in using the criterion objective chart for selecting objectives would be these:

1. Set the Scope of the Activity

   Determine the scope of the effort, such as the number of levels to be included.

2. Select Criterion Objectives

   Go through the listing of 301 criterion descriptors in the Criterion Objective Chart and check those believed to be pertinent to the reading program. Look up in Resource 5000 the generic objectives cited in the right hand column of the CO chart to verify the committee's interpretation of the criterion descriptor. Cross out any criterion descriptors that were not checked for inclusion in the curriculum.

3. Assign Criterion Objectives to Levels

   Review the checked descriptors and decide at which level or levels the criterion objectives are to be taught.

   The criterion objectives chart indicates levels for objectives already. However, these should be regarded as suggestions, with the curriculum committee making their own judgment as to levels in their own program. When the committee judgment differs from that of the bank writers, the appropriate changes should be made in the levels columns on the chart. The levels themselves may be expanded in number or reinterpreted in keeping with local practice.

In assigning CO's to levels, one may make a distinction between "Essential" and "Supplementary" objectives. Essential objectives are those which all students should acquire and on which they will be tested. Supplementary objectives are those that might be useful for some students as prerequisites or enrichment. Testing depends on the purpose for which they are acquired.

The following segment of the Criterion Objectives chart shows how it might be used by a committee weighing the placement of criterion objectives in the curriculum. In this case, the committee has concerned itself with just the first four levels of the development continuum but has subdivided each of these. They have eliminated CO 198 and have marked CO's 199, 200, and 201 as "Essential" at different levels.

Figure 4.3

Criterion Objectives: CO-GO Correspondence Chart
Used for Assigning Criterion Objectives
to Levels

CO Number	Form	Criterion Objective Descriptor	Level of Appearance						Associ
			1	2	3	4	5	6	Skill C
			1	2	3	4	5	6	7 8
198	A	Philosophy		*	*	*	*	*	004
199	A	Purpose	-	E *	E *	E *	E *	E	00
200	A	Point of View: Interpretation		- *	E *	E *	E *	E	
201	A	Opinions: Evaluation		*	*	-	E	E	

4. Adjust Criterion Objective Clusters by Levels

Take each CO selected for the curriculum and locate by code number in SPPED Resource 5000 the associated generic objectives. Examine each GO to determine whether or not it should be included in the curriculum and, if so, whether it will be appropriate for all or some of the levels to which the criterion objective has been assigned. Adjust the criterion objective cluster by levels, listing out those generic objectives to be included within the criterion objective at each level at which it will appear.

The basis for decision making about the inclusion of individual generic objectives in the CO clusters should be the contribution the GO can make to the child's attainment of the more general skill suggested by the CO descriptor. The matter of the level or levels at which the GO is appropriate depends on the difficulty of the task and committee perceptions as to the stage of reading development at which it should be mastered.

The adjustment of the criterion objective clusters by levels is essential for two reasons. First, the CO's together cover all of the objectives in the bank; an individual school district or school will want to exercise some selectivity regarding the GO's which it incorporates in its curriculum. Second, the individual GO's associated with a CO may not be appropriate for all levels suggested for that particular CO.

The latter situation, the question of the suitability of all GO's in a CO cluster for all levels suggested for that CO, is demonstrated by CO 165, "Main Ideas." The Main Idea CO is cited at, and would be appropriate for, all levels of the curriculum. However, not all of the eight generic objectives associated with this

CO would be suitable for every level. Two of the GO's (4-1-1-12 and 4-1-1-10) involve identifying subordinate ideas for main ideas; these would probably be suitable for advanced learners, but not beginning readers. Two other GO's in the cluster (4-1-1-46 and 4-1-1-47) call for the student to designate pictures illustrating phrases and sentences; these would be tasks for pupils in the readiness or early stages of learning to read. Of course, some GO's like 4-1-1-5, which simply asks for the designation of the main idea of a selection, would be appropriate for several or all levels of the curriculum. They will become restricted in their applicability only when content is added.

5. Setting Mastery Criteria

Complete the selected criterion objectives by establishing mastery standards for each level to which they have been assigned.

The "Do-It-Yourself" Method

In the "do-it-yourself" method, the curriculum committee establishes its own framework or outline for the selection of objectives and sets its own categories for judging the importance of objectives. Following are a series of procedures or steps incorporating these curriculum building tasks:

1. Set the Scope of the Activity

Determine what portion of the reading program the curriculum effort will cover.

2. Write a Content or Skill Outline

The curriculum committee might create a new outline or it might make a massive adjustment of an existing outline for a reading program.

Sources to be used in the preparation of this outline might be the skill category structure for the SPPED Reading Bank, the content classification system for SOBA-R, the UCLA System for Objectives-Based Assessment in Reading[1] the Reading section of the English Language Arts syllabus published by the State Education Department,[2] textbooks on reading, other curriculums, and so forth.

3. Establish Levels

Determine the number of levels within the span of the reading program to be covered by the curriculum effort. The number of levels may be consistent with an existing graded structure or may incorporate a larger number of divisions consistent with the structure of continuous progress programs.

4. Develop a Matrix of Content or Skills and Levels

The matrix of content or skills and levels, combining the products of steps 2 and 3 above, provides the framework for the selection of objectives.

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[1] P. Aschbacher and J. Fitzgerald, SOBA-R Field Manual 1 (Los Angeles: Center for the Study of Evaluation, UCLA Graduate School of Education, 1972).

[2] English Language Arts, Reading Section K-12 (Albany: The State Education Department, 1968).

5. Establish Categories for Judging the Importance of Objectives

In developing a curriculum, judgments must be made about the relative importance of objectives at different levels. One scale for rating importance might be the following:

1. Very important
2. Above average importance
3. Average importance
4. Less than average importance
5. Inappropriate or irrelevant

Another way of rating objectives that would reflect their status at different levels of the curriculum would be this:

1. Essential or basic
2. Review
3. Introduce
4. Optional
5. Irrelevant

The first rating system, or any variation of it, might be used for an initial screening of objectives; the second for assigning objectives to levels.

6. Select Generic Objectives

The categories established in step 5 would be used in selecting the generic objectives to fill out the content or skill and level matrix for the reading curriculum. In selecting GO's from SPPED Resource 5000, one might use the GO classification structure as a means of locating objectives pertinent to the material in the locally devised content or skill outline.

7. Cluster and Label GO's

Unless the skills in the matrix are to be considered as course or unit objectives at the levels to which they have been assigned, the GO's should be clustered into

criterion objectives and given a descriptive label. These clusters of GO's would be the basis for mastery objectives.

8. Formulate Mastery Objectives

Using the two types of criterion objectives in the reading bank as models, prepare objectives specifying the criteria or standards of performance for mastery of the clustered GO's at each level.

Sequencing Objectives

The procedures for selecting objectives have included assigning them to levels. This means that when selection is completed, one will have established a rough sequence of objectives. However, it is necessary to refine the sequencing of objectives within levels, arranging them in the order in which they may be taught.

The ordering of the GO's associated with CO's on the CO-GO correspondence chart is intended to reflect difficulty and may help planners sequence GO's. Other guidelines for the sequencing of GO's are the various systems for the classification of behavioral objectives and the analysis of learning and thinking. Bloom's Taxonomy[3] offers a hierarchial ordering of behaviors in the cognitive domain (knowledge, comprehension, application, analysis, synthesis, and evaluation) which can be used to describe and order reading objectives. The five "operations" in Guilford's "Structure of Intellect"[4]

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[3] B.S. Bloom (ed.) Taxonomy of Educational Objectives, Cognitive Domain (New York: McKay, 1956).

[4] J.P. Guilford, "Three Faces of Intellect," American Psychologist, 14, 1959, 469-479.

and the series of skills in Gagné's Conditions of Learning[5] might also be applied to reading objectives. Piaget's developmental stages in children's thinking offer another way of looking at reading tasks and determining their appropriateness in the learning sequence.[6] An overview of these several ways of looking at skill levels will be found in Reading Comprehension as Related to Thinking Processes, a part of the Reading Resource Kit designed to improve teacher competency in the teaching of reading produced by the Bureau of Reading Education of the State Education Department.[7] Study of the references cited will be desirable as suggested by that publication. In the last analysis, the curriculum planners must put the generic objectives and the criterion objectives in sequence themselves, according to their own understandings of the nature of learning and development, and the order in which objectives should occur and their beliefs about what skills need to be learned first.

One would anticipate that, regardless of the particular approach to reading (look-say, phonic, or linguistic), in some skill areas, there would be a succession of objectives which would not be repeated. In decoding, for instance, there would be a relatively straight line of progression from recognizing letters to word analysis. Of course, some repetition would occur because of different content. Consonants, for example, might be introduced one at a time or in clusters, thereby necessitating the repetition of some generic objectives with different material. But, the acquisition of

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[5] R.M. Gagné, The Conditions of Learning (New York: Holt, Rhinehart, and Winston, 1965).

[6] J. Piaget, Judgement and Reasoning in the Child (Paterson, New Jersey: Littlefield, Adams, 1959)

[7] Reading Comprehension as Related to Thinking Processes (Albany: Bureau of Reading Education, The State Education Department, June 1973).

skill in decoding would reach a terminal point beyond which further teaching would be unwarranted.

In other areas of reading, notably the various comprehension skills, objectives would be introduced in beginning reading and would recur throughout the entire reading curriculum to the advanced application stage. These objectives would be repeated both within levels and at different levels, but, in succeeding stages of reading development, the material and thus the task would be more complex. One might describe comprehension skills as spiraling upward through the curriculum, increasing their scope as reading ability increased.

The material or content aspects of an objective are an important factor in determining its location in a learning sequence. Content is added to the generic objectives when they are transformed into instructional objectives as described in the next section. The relationship between content and the location of an objective in a sequence is somewhat circular. The initial assignment of a GO to a level of the curriculum suggests the difficulty of the content to be added to it. On the other hand, the content of the objective may dictate its place in the learning sequence. Objectives concerned with letters, their names, sounds, and so forth, would come early in the learning sequence; objectives involving lengthy selections and abstract concepts at a later point in time.

Sequencing objectives will have the effect of stratifying the reading curriculum, or of establishing benchmarks within the levels to which objectives were originally assigned. While sequencing is necessary, in exactly what order--or if there is any order--in which reading skills are learned is a matter of debate. It is known that an individual child can operate at a low level on a given skill, say identifying long and

short vowels, and at a higher level on another skill, like getting the main idea of a story. With this in mind, it is best to accept the fact that the sequencing task involves a certain degree of arbitrariness. Once teachers begin to use a program and gather data on it, one will be able to determine where the selected sequence needs to be modified.

Translating Generic Objectives into Instructional Objectives

As previously noted, generic objectives become instructional objectives when content elements are added to them. SPPED Resource 5002 provides lists of content elements for some of the generic objectives. These materials lists are suggestions and certainly do not exhaust the content that could be drawn upon. The lists are graded by difficulty so that the curriculum planner can select materials with level designations corresponding to the six developmental stages for the reading curriculum. Content selected from other sources must be evaluated as to difficulty.

How content selection can affect the level of an objective can be demonstrated with GO 2-1-3-14: "Given two or more words, the student designates them in alphabetical order." An instructional objective derived from this GO might read, "Given four words, the student designates them in alphabetical order." The difficulty of the IO using list 1 below would be quite different from that using list 2, though both contain only four words.

List 1	List 2
cat	Alaska
zebra	Alabama
ape	Arkansas
monkey	Arizona

Adding and Modifying Objectives

In the process of selecting and sequencing objectives, the curriculum committee may find that there are some behaviors which they believe are essential to learning to read but which are not included in the bank. When this occurs, the committee should write its own objectives or take them from another source.

The SPPED bank is not a universally relevant, exhaustive, definitive collection of reading objectives. Rather--and this is its value--it is a starting point from which a local curriculum team can develop its own curriculum in reading. Any CO and GO within the collection can be modified to fit local needs and preferences. Deletions and additions should be made so that the finished product reflects the best thinking and efforts of those who will use it.

When objectives are added or modified, attention should be given to keeping them consistent with other objectives drawn directly from the bank. That is, any generic objectives should be complete with an input and an output. All components of the objective--the mode, number, stimulus, indicator, product, and any modifiers--should be clearly stated or indicated in accord with the conventions described in chapter 2. Similarly, any new criterion objective should conform to the patterns used for other criterion objectives.

The curriculum committee may, of course, choose to modify the style of the GO's and CO's as they build their own collection. Regardless of any stylistic changes, the final products should be complete and clearly stated. These same standards would apply to the instructional objectives derived from the generic objectives. Various

materials, such as Norman E. Gronlund's Stating Behavioral Objectives for Classroom Instruction[8] offer further guidelines for maintaining the quality of objectives.

The Curriculum Bank

As soon as the development of the reading curriculum is underway, some system for physically organizing objectives will be necessary. This organization system should be one that is amenable to change and that can be expanded over time to include such things as test items and information on the utilization of the objectives, test results, and instructional materials. A local "banking" operation, containing all of the local school or school district materials, would meet these needs.

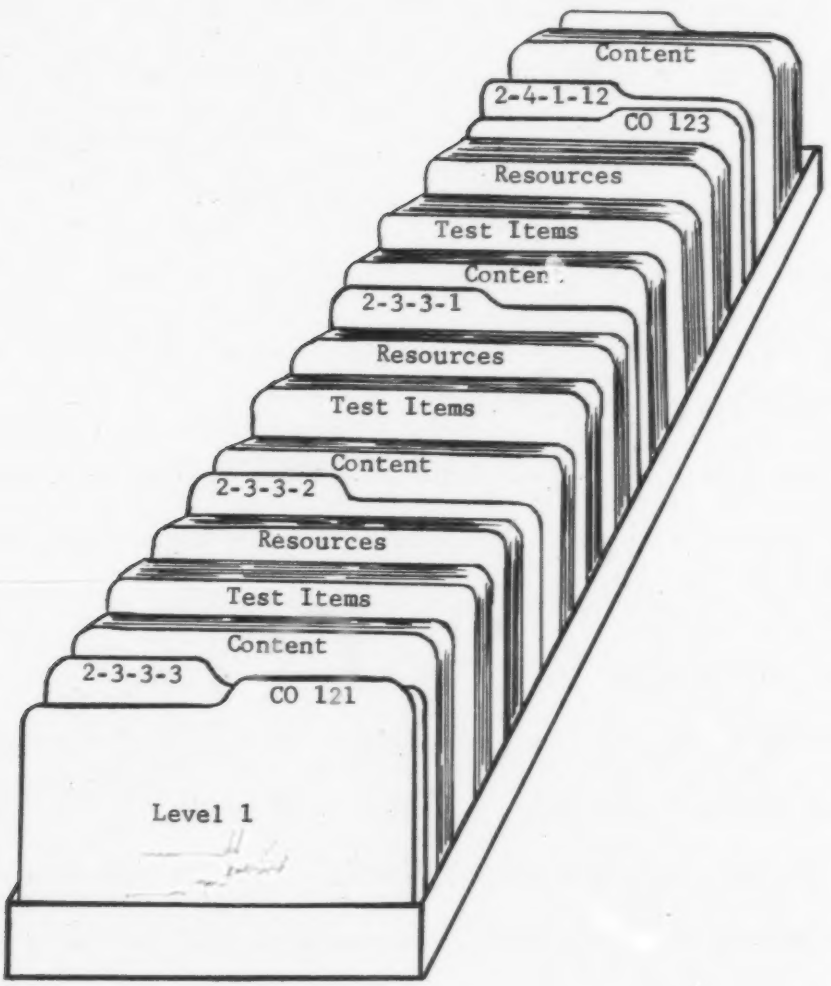
As previously indicated, the formats of the Generic and Criterion Objectives in SPPED Resources 5000 and 5001 have been designed so that they may be duplicated and manipulated in a number of different ways.

A paper bank could be made up of a series of file folders, one for each objective. Test items and other materials could be placed in the file folder with the objective to which they were related. An alternate arrangement would be to put the objectives, test items, and related data on color-coded cards, say white cards for objectives, canary-yellow for test items, and blue for user information. A third possibility would be to have separate files for objectives, items, and resources with related materials carrying the same code numbers. In all three cases, the files could be arranged with tab cards showing level and criterion descriptors as shown in figure 4.4. With a file system, objectives, test items, and other data can be easily removed and sets of objectives

[8] N. E. Gronlund, Stating Behavioral Objectives for Classroom Instruction (Toronto : Macmillan, 1970).

Figure 4.4

File Arrangement
for Reading Objectives
and Related Materials



and tests readily prepared. More detailed directions for creating a paper bank will be found in the SPPED Resource Paper on An Objective and Item Banking System: Paper-Based.[9] (See appendix A.)

Summary

This chapter has discussed procedures and considerations in the development of a reading curriculum from the bank of reading objectives. Once the intended outcomes of instruction have been established, the next concern is the means--the instructional processes--by which those objectives may be attained. Instruction and objectives is the subject of the next chapter of this manual.

[9] P.D. Pinsky, M.M. White, and W.P. Gorth, An Objective and Item Banking System: Paper-Based (Albany: Bureau of School and Cultural Reseach, The State Education Department, 1972).

CHAPTER 5

INSTRUCTION AND OBJECTIVES

We have said that the three major components of a school reading program are curriculum or objectives, instruction, and evaluation. In this chapter we will look at instruction and how instruction and objectives are interrelated.

Instruction is more than what the teacher does in a classroom. It includes everything designed or selected to help students attain learning objectives--all planned activities, presentations, events, teaching methods, teaching materials, and interactions between teachers and students. The nature of these elements of instruction will be determined in large part by the organizational framework or model in which instruction takes place. It is important, therefore, to give some consideration to organizational models.

Organizational Models for Instruction

Organizational models for instruction are the patterns in which students, teachers, teacher aides, and various instructional resources are organized for learning. Some models are relatively simple and make use of only a single kind of student-teacher-resource interaction; others are more elaborate and allow varied and complex interactions.

The organizational model is a key part of instruction. It determines in part the kinds of instructional resources which are suitable for classroom use. In an individualized

model where each child has his own learning resource through which he proceeds at his own rate, there is no need for an overhead projector or other large-group instructional devices, but there is need for a multiplicity of materials for individual use. A model which relies entirely on large-group instruction, on the other hand--one which is group-paced with a single learning source used simultaneously by all students--couldn't make good use of programmed instruction texts. The overhead projector would have a place here. An organizational model which accommodates large-group, small-group, and individualized instructional patterns can, of course, take advantage of many kinds of instructional resources.

The organizational model also determines how much control students have over the pace of learning. An individualized model, which includes several sources of instruction available when and for as long as a student needs them, allows him to learn at his own pace. A model which relies on large-group lectures or demonstrations performed once and without supplementary instruction, requires all students to move at the same pace.

An objectives-based reading program does not necessitate a particular organizational model for instruction. However, the organizational model will determine how objectives are used--the number of objectives to be attained, the sequence in which they are learned by individual students, and when testing occurs for the achievement of objectives.

Organizational Models in Reading

The organizational models for reading instruction may be ranged along a continuum, with a Whole Class Basal pattern at one end and a Totally Individualized,

Diagnostic pattern at the other. In the Whole Class Basal pattern, there is a single curriculum--a predetermined scope and sequence with one set of materials used simultaneously by an entire class under the guidance of a single teacher. All students start at the beginning of the sequence; after each unit of instruction, they are assessed to determine whether or not they have mastered the skills or attitudes taught. Data gathered from these tests or observations are used to make adjustments in the program and the rate of instruction of the entire class. The entire curriculum is to be completed within the school year, and any student not finishing with the group may be required to repeat the entire sequence.

At the opposite end of the continuum, the Totally Individualized Diagnostic pattern has a broad range of objectives and a wide variety of materials available to students in every class. It is assumed that every student has some reading abilities. Upon entry into the reading program, each student is pretested to determine which objectives he has already mastered and which he has yet to attain. At the same time, an effort is made to determine his learning style and other personal characteristics such as interests which might affect his reading progress. From this information, a unique curriculum is formulated for the individual student, and instructional materials are selected in keeping with his personal needs. After each unit of study, the student is posttested on the objectives for which he has had instruction, and the results are used along with the results of more pretesting to choose the objectives and materials he will study next. With this totally individualized pattern, the student may work independently or he may be part of a small or large group with similar diagnosed needs. The groups are flexible, and the individual proceeds at his own rate. To accommodate the various groupings and to assure individual attention, the class teacher or teacher

team is assisted by paraprofessionals, teacher aides, and volunteers.

The two organizational models just described are indeed extremes, and most real life classrooms lie somewhere between with elements of both the Whole Class Basal model and the Totally Individualized Diagnostic model present in varying degrees. The points of contrast, epitomized by the ends of the continuum, are: (1) whole class vs. individualized instruction; (2) single vs. multiple curriculums; (3) a basal series incorporating one of several possible approaches to reading instruction vs. multiple materials with diverse approaches to reading; (4) group-paced vs. self-paced rates of learning; (5) posttesting vs. pretesting, posttesting, and curriculum embedded testing; (6) a single teacher vs. multiple staff. How these features are varied and intermingled is suggested by the continuum depicted in figure 5.1 on page 72. Brief descriptions of the eight intermediate models are given below along with capsule summaries of the previously described extremes.

Organizational Models for Reading Instruction

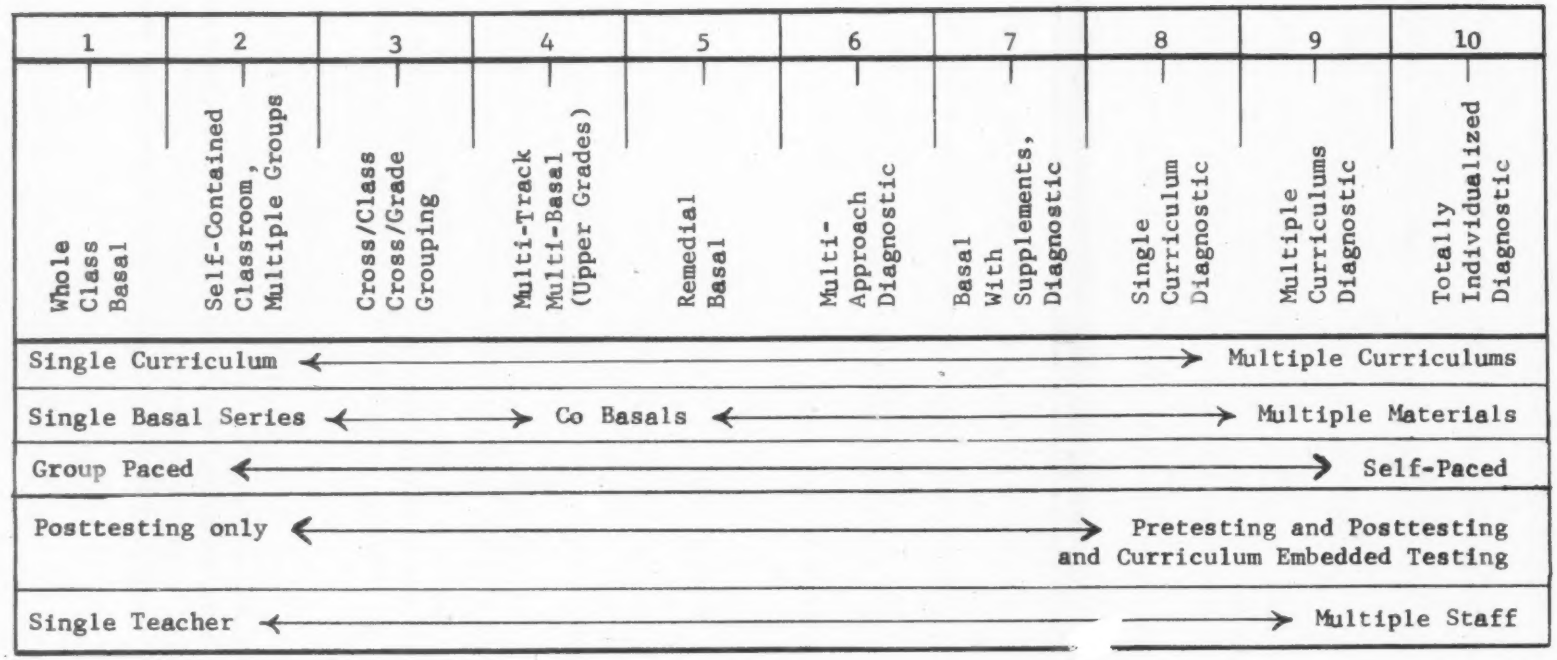
1. Whole Class Basal--This large group instruction model uses a single set of materials and relies on formal or informal posttesting to make minor adjustments in the rate of instruction for the group.

2. Self-Contained Classroom, Multiple Groups--With a single group and a predetermined sequence, this model assigns pupils to small groups on the basis of rate of learning as demonstrated by posttesting. With several groups and freedom to shift from one group to another, considerable individualization can be achieved within this model.

3. Cross Class/Cross Grade Grouping--Still using a single curriculum with a predefined sequence, this model forms instructional groups across classes and grades on the basis of past achievement and rate of learning. Fast groups advance to higher levels of the curriculum in these "nongraded" programs which often involve team teaching.

Figure 5.1

A Continuum of Organizational Models
for Reading Instruction



4. Multi-Track Multi-Basal--Two or more tracks with different basal series are established by grades four or five when posttesting on past instruction has labeled students as "fast" or "slow" learners. Differences between pupils in different tracks become more pronounced with the passage of time.

5. Remedial/Basal--In addition to a single curriculum, slow students are offered remedial work with special instructional modules and materials to help them catch up and maintain their learning rate with the rest of the group. Reading specialists, paraprofessionals, and volunteers may be used for remedial work within or outside the regular classroom.

6. Multi-Approach Diagnostic--With two or more curriculums emphasizing different approaches to reading instruction, e.g., phonic, linguistic, look-say, children are pretested formally or informally to identify achievement, rate, and learning style and are assigned to appropriate curriculums.

7. Basal With Supplements, Diagnostic--In addition to a basic program or basal series, supplementary materials are used to meet individual needs as diagnosed by formal or informal testing. This model differs from the Remedial/Basal Model in that the use of the supplementary materials is considered a natural part of reading instruction and not a corrective measure for deviations.

8. Single Curriculum/Individualized Curriculum Diagnostic--The single reading curriculum is an elaborated set of skills and attitudes on which each pupil is pretested. The student's individual curriculum is made up of those skills and attitudes which he has not acquired. In this model, there will be as many different curriculums as there are students in the classroom. The variations occur more on rate of learning than on the objectives. Besides working independently, students may come together in small and large groups to work on the same skills or attitudes.

9. Multiple Curriculums/Individual Curriculum Diagnostic--This model is similar to the Single Curriculum Diagnostic model except that there are multiple curriculums (a number of scopes and sequences) and a variety of materials. The student's individual curriculum is formed on the basis of pretesting which indicates what skills and attitudes he has to acquire.

10. Totally Individualized Diagnostic--Here, there are alternate curriculums with a broad array of skills and attitudes and great diversity in the available materials. The student's individual curriculum is determined by pretesting and an effort is made to match materials to his personal needs.

In addition to describing existing organizational patterns, the foregoing models illustrate the historical trend in both the practice and theory of reading instruction. The current emphasis, incorporated in the Regents 1971 Position Paper on Reading,[1] is on the individualized-diagnostic-prescriptive approach to reading instruction. This approach complements the view that learning to read is a developmental process through which each child progresses at his own rate. The crux of reading instruction is to determine the stage of development the child has reached and then to select the particular experiences and materials which will help him to move on to the next developmental level.

Although the trend is toward the diagnostic models, the most common patterns for reading instruction are those at the left of the continuum, with models 2 through 5, or some variation of these, predominating. Many schools are attempting to move toward diagnostic patterns, but only a few have achieved a totally individualized diagnostic model. While an objectives-based curriculum can be used in any organizational model, behavioral objectives and the test items associated with them can make the greatest contribution to the improvement of reading instruction by helping teachers provide diagnostic-prescriptive instruction.

Using the Models Continuum

In a given school system or a given school, one would undoubtedly find more than a single organizational model for reading instruction. In New York City, with its thousands of classrooms, one could probably find examples of all possible models on the continuum. The school district which undertakes a curriculum development project

[1] Regents of the University of the State of New York, Reading, A Statement of Policy and Proposed Action (Position Paper No. 12; Albany: The State Education Department, July 1971).

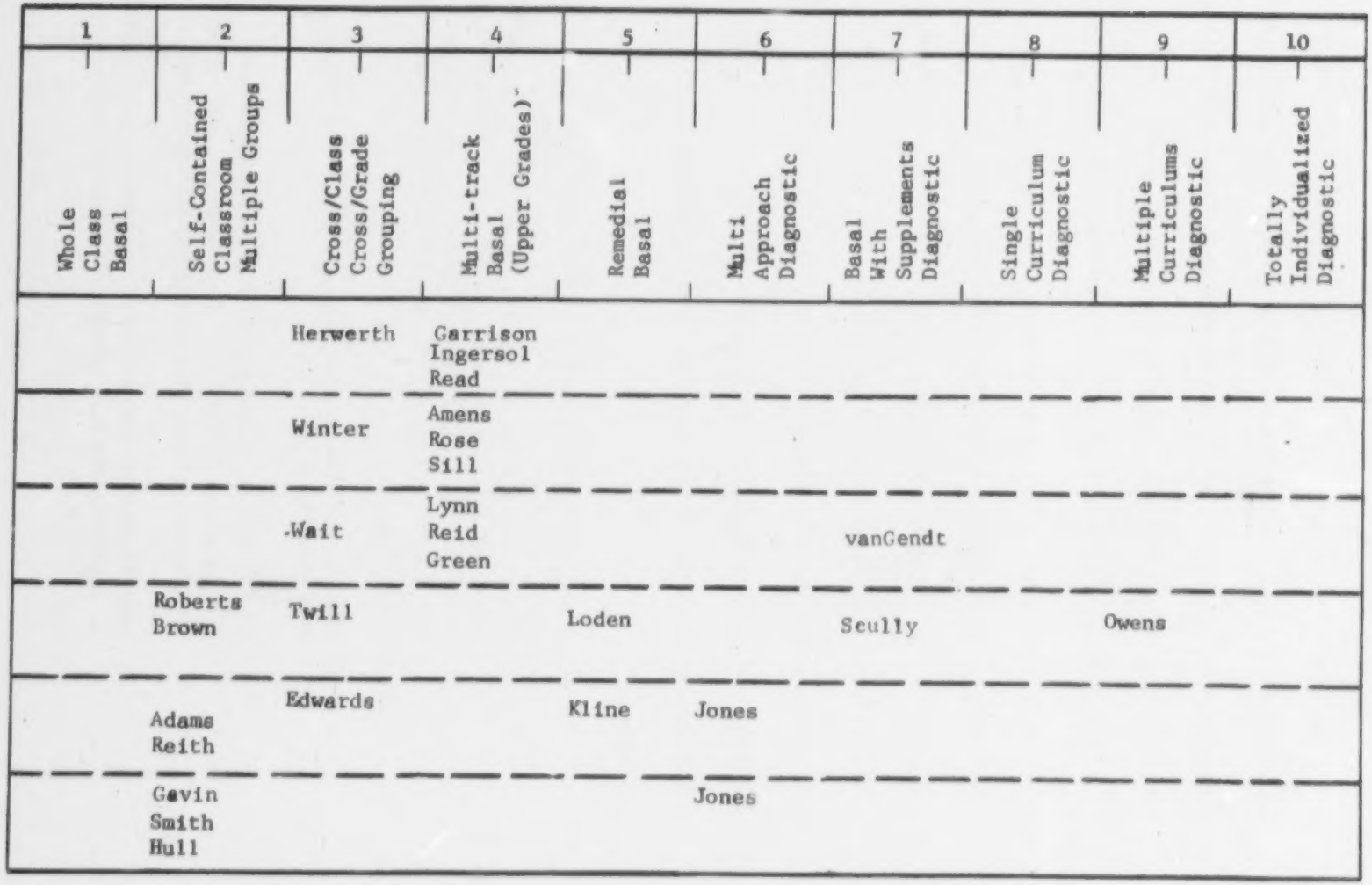
using the bank of reading objectives will want a clear picture of just how it is currently organized for reading instruction. The models continuum is a tool for appraising the local school situation. Because there is diversity within a school district, it will be necessary to identify the unit which is to be examined. Possible units are school buildings, grade levels within buildings, and individual classes.

The most meaningful analysis would start with individual teachers locating their classes on the continuum. (This analytical process must be clearly understood as a fact-finding procedure and not a basis for teacher evaluation or it will be both unproductive and psychologically damaging.) The results of the class analyses would be combined to give a composite picture for a school. The result would probably be a kind of scattergram as shown in figure 5.2, page 76 . In this case, it is apparent that organizational patterns change with progress through the grades and that there are individual attempts at diagnostic teaching. Specific steps for use of the continuum are these:

1. Review the continuum and the descriptions of the 10 models.
2. Place a mark on the continuum to show where your class (or other unit of analysis) stands in relation to the given models. Be realistic in your appraisal. Do not confuse intention--how the unit is supposed to function--with what is actually happening.
3. Draw up a list of the aspects of your class which caused you to locate it where you did.
4. Discuss the placement of your class and your list with a colleague who is familiar with the situation, making any adjustments resulting from the sharing of perspectives.
5. Select the model that you would consider ideal and mark its position on the continuum.

Figure 5.2

Scattergram Resulting from Use of Continuum
to Identify Organizational Models for
Reading Instruction in Whitman Elementary School



6. Compare the actual with the ideal as a guide for determining modifications to be made.

7. List the changes required to achieve the ideal. These might include:

    a. Better definition of objectives

    b. Additional teaching resources

    c. Auxiliary staff

    d. The development of both informal and formal testing procedures.

    e. Training in organizing curriculums for individual pupils or groups of pupils within classes.

8. Develop a plan to move toward achievement of the ideal.

    a. List the management objectives to be achieved, e.g., developing a file of individual learning prescriptions.

    b. Define the activities needed to achieve the objectives, e.g., to develop a file of learning prescriptions, analyze existing learning materials.

    c. Develop a schedule and budget.

Having determined the current status of the reading program and established the ideal to be achieved, the planning committee can begin to concern itself with instructional activities and materials. The next section of this chapter takes up the matter of obtaining needed resources. This may mean finding a ready-made program that meets local needs, pulling together materials from a number of sources, or designing new resources.

Instructional Activities, Materials, and Objectives

Turning from the organizational aspects of instruction, we will now give brief attention to instructional activities and materials in an objectives-based reading program.

If the objectives of the curriculum tell what it is you want pupils to be able to do, then they are the best guide for the selection and development of instructional activities and materials. However, objectives alone cannot determine the means of instruction.

Also to be considered are:

1. Student characteristics--their abilities, their individual learning styles and rates, their interests, and their previous learning experiences both in and out of school. A teaching device that is a sure thing with one pupil may be a total failure with another, all because of individual differences.
2. The instructional environment--the physical and financial resources of the school and the organizational model for instruction. This factor puts limits on the particular methods and materials that can be used. Self-instructional video cassettes, however pertinent to objectives, would be of little use without the necessary television equipment; they would also be quite inappropriate for large-group instruction.

3. Learning principles relevant to the type of response to be taught or the type of student. For example, the amount of practice required for a student at one level of ability to learn a given response may be many times over that required by a student at another level of ability. Feedback and other reinforcement contingencies affect learning. Some students react positively to concrete reinforcers, while others react primarily to praise and blame. Relevant learning principles are included in standard texts in educational psychology and in specific research reports available on certain areas of learning. To apply these principles, it is necessary to identify the type of response required by an objective and then to match it with the class of responses covered by the learning principle, e.g., auditory discrimination learning. This type of analysis will make clear the limitations of objectives in serving as a source for the derivation of instruction.

Keeping these considerations in mind, here are some different procedures for deriving instruction from objectives. They involve (1) selecting resources, including a basal reader, (2) modifying resources, and (3) designing new materials and activities. These three procedures may be sequential. That is, if existing resources are not suitable for the objectives, then one may be obligated to modify them or, as a final resort, to come up with his own ways and means of teaching the objectives. Whatever procedure is used, there is the same necessity as in the curriculum development task for

organizing personnel, fixing responsibility, and assuring cooperation and communication.

Selecting Resources

In selecting resources, a curriculum committee may be utilizing what they already have on hand or they may be making new acquisitions. In either case, similar procedures apply. The steps outlined below assume that the committee is working with materials on hand.

1. Define the area of the curriculum for which resources are to be selected, and list all the instructional objectives to be covered.

   The curriculum could be divided up by level, by topics or skills within levels, by topics or skills across levels, or by units of instruction. However the limits of the task are set, the focus must be on specific instructional objectives or summative criterion objectives so that matches may be made in terms of actual content and levels of difficulty.

2. Draw up an inventory of existing instructional resources: basal series, supplementary readers, trade books, audiovisual materials, and so forth.

   In inventorying materials, separate lists may be prepared for the different levels of the reading program. These should be considered tentative level assignments until the material has been reviewed in relation to the objectives of a given level.

3. Review the inventoried resources to locate activities and materials related to the specific objectives of the curriculum.

a. Use indices, tables of contents, and teacher editions to locate appropriate material.

b. Skim resources looking for content which matches the objectives.

c. Use published analyses of resources to locate pertinent references.

The skill categories, the CO descriptors, and the content elements would be key words to use in pursuing steps a and c above. The reviewers should be aware of alternative terms on which to search.

4. Analyze the materials and activities to determine whether or not they match the instructional objective[s] of the curriculum.

   This matching process may require inferring an objective from the material or activity and then comparing the inferred objective with the stated curriculum objective.

5. Record with the objective number, the materials reference including the name of the resource and the exact pages or other location, e.g., frames 5 and 6 of a film strip, where the material is found.

6. Have the appropriateness of the selections reviewed by one or more other members of the working committee.

Steps 1 and 3 through 6 above would apply in appraising new resources to be acquired for an objectives-based reading program. A decision about purchasing a particular material would depend on whether it filled a void in existing resources and how useful it would be or to how many different objectives it would apply.

It might be found that a single commercial program such as a basal series embraced all of the objectives deemed essential by the curriculum committee. The adoption of

any comprehensive program with the financial investment that it entails should be based on a thorough examination of the material in light of what the school or school system has established as its objectives in reading.

Recordkeeping on prospective purchases should include a listing of all objectives to which the resource would apply with a reference to the exact location of the material for each objective.

Modifying Resources

This procedure recognizes that some materials may be related to objectives but may not have the same intent. Similarly some activities may be relevant to objectives in the curriculum, but they may not be appropriate for the students in question, or they may not take into account applicable principles of learning. With some modification, these materials or activities could be used to teach the stated instructional objectives.

1. In the course of the review of existing resources described under "Selecting Resources" above, make note of materials that are relevant but not fully compatible with objectives or that need change in light of student needs or learning principles.
2. Write up instructions for modifying the resource by, for example, expanding the content of the activity, e.g., adding vocabulary, or by changing or adding an activity to more effectively apply a relevant learning principle, e.g., adding practice exercises.

Designing Instructional Materials and Activities

This procedure calls upon the school staff to exercise their professional experience, their understanding of the children they are teaching, and their knowledge of the principles of learning. It may give teachers an opportunity to formalize and share with others activities which they have used successfully in their own classrooms for some time, or it may require the invention of new activities or materials. These are the type of steps to be followed in designing instructional materials and activities:

1. Analyze the instructional objective in terms of content and student behavior. List out the input stimuli and the expected student responses.
2. Determine the class or type of learning represented by the objective, e.g., discrimination learning. (Recognizing the type of learning is important because the ultimate intent may be to transfer the learned response to other situations.)
3. Determine the appropriate mode or modes for presentation of the stimulus and for the student response.
4. Determine the relevant principles of learning in such areas as reinforcement, practice, review, and so forth.
5. Devise activities that incorporate or lead to the behavior of the objective, applying the relevant learning principles.
6. Write out explicit instructions for the conduct of the activity, including specifications for:
    a. the materials to be used
    b. the mode[s] of presentation

c. the spacing of reinforcement and the type of reinforcer to be used, e.g., a concrete reinforcement such as candy

d. the spacing of practice or review.

7. Have the activity tried by two or more teachers.

8. Modify the activity on the basis of classroom experience with it.

All of the above procedures involve personal judgments about the utility or validity of instructional materials and activities. These judgments rely on there being an obvious match or similarity between the stimulus material and student behavior specified in the objective and the content and activity of the instruction. In the long run, however, the validity of instructional activities and materials depends on whether or not they do enable the student to attain the objectives with which they are associated. This brings us to evaluation which will be the topic of the next and final chapter of this manual. Before moving on to that topic, we will briefly consider the matter of incorporating instructional resources in the local reading bank.

Banking Instructional Resources

The procedures for selecting, modifying, and designing instructional materials and activities have all used objectives as the starting point. Permanent records or indices on instructional resources should indicate the objectives for which they are to be used and the level or stages of reading development for which they are intended. Other pertinent information would be:

1. The organizational model for which the resource would be appropriate (large group, small group, or independent study)

2. Staff requirements (Is the material self-instructional or is the direction of a teacher or aide required?)

3. Special equipment needed

4. The type of learning involved

5. The modes for the stimulus presentation and the stimulus response

6. Any available data on the type of students with whom the resource has proven successful.

Eventually, it should be possible to add information about the effectiveness of the resource with students in the local school situation.

The references to resources may be maintained in file folders or on cards in a manner similar to that suggested for objectives at the end of chapter 4. These references should be complete with page numbers or other specific information on the location of material and with the publication or other source clearly identified. An additional file system will be required for materials and activities developed by local school personnel. This file would probably be composed of master copies of materials, such as work sheets and vocabulary lists, and procedures which could be duplicated in quantity as needed. The complement of a well developed set of references to resources is, of course, a readily accessible collection of the materials, adequate for the number of teachers and pupils that will use them.

CHAPTER 6

EVALUATION

In this chapter we come to evaluation--its purpose, design, and the role it can play in the reading program.

The Purpose of Evaluation

Current theories on evaluation in education define its primary purpose in terms of decision making. Evaluation is regarded as the process by which one obtains pertinent information or data for specific decision-making activities. In the SPPED project, decision-making activities are related to the effective management of instruction.

Effective management requires decisions about:

- students as they are involved in instruction
- the content and methodology of instruction itself
- the adequacy of the curriculum.

Decisions about students will focus on the objectives they study and the instructional experiences to which they are exposed. Decisions about instruction result in such actions as replacing or redesigning materials or adding more practice to an instructional module. Decisions about curriculum result in actions such as eliminating or adding an objective, shifting an objective to a later point in the instructional sequence of the reading program, or adjusting the performance standards for a given objective.

These examples should suggest that within a school or school district different people will be involved in decision making. Decisions about students and about some aspects of instruction--for instance, which of available materials to use--will most likely be made by the classroom teacher or by the classroom teacher and the reading specialist. Other decisions about instruction, such as whether a new series of programmed materials should be introduced, and those about the adequacy of the curriculum will probably be made by a group of teachers or a curriculum committee. Some decisions about instruction--for instance, those involving sharp departures from existing teaching methods or the expenditure of new funds, as well as some curriculum changes--may require administrative and even community participation.

What is considered pertinent information or data to be provided by evaluation will vary with the decision-making task and the persons involved. Determining these information needs is the first step in setting up an evaluation design.

Evaluation Design

If evaluation is to be used for decision making, one must have an appropriate plan or design. One must first ask:

- What type of data or information is needed?
- How much data is needed?
- When will the information be needed?
- How often will it be needed?

The answers to these questions will vary with the decision to be made. Decision making about the daily program of an individual child, for example, would require information on his performance on specific instructional objectives; this information

would be pertinent before as well as during and after the instruction on those objectives. Furthermore, the teacher would have to have several examples of a child's performance on a particular objective to be sure that he had mastered that task. A kindergartener labeling one picture of a carrot "vegetable" would not be evidence that he had learned the concept of "vegetable." For some decisions on individuals, the teacher would also want information about the student's background, health, interests, and so forth.

What information is needed and how often are determined to some extent by the instructional model for the reading program. A Totally Individualized Diagnostic model demands frequent data collection on every child for decisions are made for each individual on an almost daily basis. Conversely, in a Whole Class Basal model with group-paced instruction, testing can occur less frequently, and the data for individuals can be pooled so that decisions are made on the basis of group performance and the needs of the majority. In an intermediate model which combines group and individualized instruction, the information needs would be somewhere in between. Pooled data would be appropriate for determining the progress of the class from one set of objectives to another. Individual test results would be necessary to make decisions about instruction for those students who did not keep pace with the majority.

For a teacher to make decisions about the instructional process in the classroom, pertinent data would be the proportion of pupils who achieved particular objectives when certain materials or a given teaching approach were used. Also important would be information on the characteristics of pupils with whom materials were successful. Decision making about whether to continue or abandon a particular type of instruction, such as the use of programmed materials for reading, could be based on group data on selected objectives obtained at longer time intervals.

Decisions on the adequacy of the curriculum would also require group data on the achievement of objectives. The frequency of data collection would depend on whether a segment or an entire curriculum were under study. Lower level objectives might be validated by finding out whether students who achieved them were successful at subsequent levels of the curriculum. In such cases, the results of several years of testing might be used.

When the type, timing, and frequency of the information needs of decision makers have been established, one can proceed to the other major aspect of evaluation design: determining the means by which the data will be collected, setting up a schedule for the data collection, and deciding upon the ways in which the data will be reported. The major means of gathering information for decision making is testing, which is the next consideration of this chapter.

Before concluding this section, one should note that if the procedures for curriculum development suggested in this manual are followed, the process of evaluation design will have been started with the selection and sequencing of generic and criterion objectives. The objectives selected will prescribe some of the information needs of the decision maker; he will want to know how students perform on those objectives. Test design and test scheduling will be based on the specifications given in the criterion objectives and on how they are organized into instructional units or modules. The construction of test items will be determined by the GO's associated with the CO's and the GO content material.

Testing

We have said that the major means of data collection for educational decision making is testing. While the term "testing" is most often equated with a "written examination" or a pencil and paper test, it can encompass many types of data gathering or observation. Observations can be made on oral or manual performance; they may focus on a single performance or look at what a pupil does over a period of time. They may be used to assess such diverse things as interpretive oral reading and reading appreciation. An observation of interpretive reading might use a checklist covering voice pitch, intonation, pronunciation, and so forth, while an observation for reading appreciation might entail counting the number of books a student took out of the library in the course of the year. Whatever the observation defined as testing, the important thing is that it be objective and that there be a record of the performance observed.

Testing in an Objectives-Based Reading Program: Criterion vs. Norm-Referenced Testing

In an objectives-based reading program, the purpose of testing is to determine whether or not students can perform those behaviors which are the intended outcomes of instruction. The tests derived from behavioral objectives are referred to as "performance" or "criterion-referenced" tests. The latter term is used because test performance is evaluated in terms of the criteria or standards stated in the objectives. Criterion-referenced tests are frequently contrasted with norm-referenced or standardized tests.

Standardized reading tests as they are used in many of today's reading programs are of little use for decision making by either the classroom teacher, the school administrator, or anyone interested in knowing the effectiveness of the reading instruction.

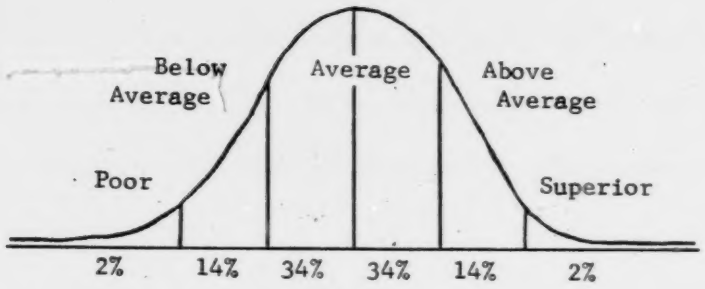
The inadequacy of standardized test data is due to the content of the commercially available evaluation instruments, the way they are constructed, and the way test results are reported. While performance tests measure specific behavioral objectives, standardized tests usually assess global skills such as comprehension and "word knowledge." Standardized tests may indicate general areas of strength or deficiency; they do not tell teachers what students need to learn nor do they help curriculum designers decide what materials to purchase or what instructional activities to instigate to change student behavior.

In the construction of a norm-referenced or standardized reading test, items measuring the general skills of comprehension and word knowledge are administered to a representative sample of students at a given grade level. The items selected for inclusion in the finished test are those passed by 25 to 75 percent of the students in the sample; the largest number of items in the completed test are those that were passed by 50 percent of the sample students. This means that test items on which all students might score well are eliminated at the start.

As a result of this construction procedure, the test scores of the standardization group are distributed in the bell-shaped normal curve shown in Figure 6.1. The scores of students subsequently taking the test are compared with those of the standardization group, and an individual student may then be graded as average, above average, or below average. The percentile standings in which standardized test scores are usually reported simply compare a student with a group rather than indicating what degree of proficiency he has attained.

Figure 6.1

Normal Curve Distribution of Scores
on a Standardized Reading Test



Percentages Rounded

Again, the comparative data of standardized test scores are of very limited diagnostic use to the teacher, the school administrator, or the interested outsider. The scores do not tell what skills the students have or have not achieved, and they do not give any specific clues as to what needs to be done if there is to be improvement. Moreover, the comparative scores of standardized testing can create psychological and motivational problems which may interfere with the instructional process. Comparative results can be equally harmful when the teacher uses a normative approach in her own teacher-made assessment procedures. The child whose test scores are always below average may lose his incentive for reading.

As previously indicated, an alternative to norm-referenced testing is criterion-referenced testing. The basic differences between these two types of testing are not in the kinds of questions asked (they are often the same), but in the procedures for selecting test items and the method of reporting results.

Items on a criterion-referenced test are determined by the objectives they are intended to cover. The objectives specify the nature of the test items and the standards of performance. Performance standards indicate the proportion of correct responses that will be accepted as evidence of mastery. Test results are reported in terms of the performance standard or mastery criterion; the mark for an individual student may be a simple "pass or fail"--achieved or not achieved. For example, a criterion objective on Syllabication (CO 132) might require the student to designate the number of syllables in 10 words of 2 to 5 syllables each with 90 percent accuracy. Test results for 10 students on this objective might appear as in Figure 6.2.

Figure 6.2

Test Results for
CO 132: Syllabication
Level 1

Number of Words: 10
Performance Criterion: 90 Percent Correct Responses

Student	A	B	C	D	E	F	G	H	I	J
Number Correct	9	9	10	8	10	5	9	9	10	2
Pass or Fail	P	P	P	F	P	F	P	P	P	F

Summary: Students tested - 10; Passing - 7; Percent meeting criterion - 70

Because it is directly related to curriculum objectives and hence to the instructional program, and because its results put attention on achievement in terms of a criterion or standard of performance rather than on comparisons among pupils, criterion-

referenced testing is considered by many to be more constructive and humane than norm-referenced testing. The testing referred to throughout this discussion is criterion-referenced testing.

Types of Tests

Tests can be classified in different ways according to their content and the time at which they are given.

A survey test is one that is distinguished by its content; it covers a total course or program by including some items on every topic in the course. Year-end or semester examinations in academic subjects are good examples of survey tests for they usually cover most areas of the course but not every detail studied.

A survey test in an objectives-based reading program could cover all of the criterion objectives for a given level. However, unless the total number of CO's was limited, an all-inclusive survey test would be unmanageably long. Accordingly, a reading survey test might cover only the most important criterion objectives for a given level of the curriculum. Developing such a survey test would involve a high degree of selectivity as one would have to determine not only the CO's to be tested but also which of the GO's associated with the CO's should be assessed. Some CO's at a given level may actually be prerequisites for other CO's and could be eliminated from a survey test for that reason.

A survey test might cover objectives at a number of different levels of difficulty. The reading surveys used to place children in a reading curriculum often follow this pattern.

Sometimes the term "survey test" is used to describe the standardized tests used

to obtain information on large numbers of pupils. When used for this purpose, the survey test usually taps general rather than specific skills or objectives. Survey tests for groups would be more useful if written on specific behavioral objectives.

There is no single type of test that can be contrasted with the survey test. The general characteristic of these "other" tests is that they are limited in scope. A unit test, for example, limits its content to a particular unit of instruction. In an objectives-based reading curriculum, a unit test would likely cover all of the criterion objectives in the unit.

To classify tests by time, one could use these categories: Pretest, curriculum-embedded test, posttest, and retention test. The point of reference in each case is instruction.

> A pretest is given before instruction occurs.
>
> A curriculum-embedded test (CET) is given in the course of instruction and may even be a part of the instruction.
>
> A posttest is given after instruction.
>
> A retention test is given sometime after instruction when there has been an opportunity for other learning to occur; it follows a posttest so that one can compare what is remembered with what was learned.

A single test can be labeled or classified in different ways. A survey test, for example, may be given as a pretest or a posttest. As a posttest, a survey test is in many respects a retention test; that is, it includes items on objectives learned some time in the past.

In an objectives-based reading program, the various types of tests may be used individually or in combination. Which ones are used and how often will be determined by the decisions to be made. The decisions to be made will in turn be influenced by

the curriculum, by the way objectives are organized into units or modules, and by the instructional model. Diagnostic individualized instruction usually entails more testing than does group-paced instruction because diagnostic individualized instruction requires more decision making.

The kinds of decisions that can be made with test results are demonstrated in the following more detailed descriptions of test types. The information given will be summarized in table 6.1 on pages 98 and 99.

Survey Pretest--This test samples all of the important criterion objectives for a year or level. Results of a survey pretest would tell a teacher which groups of objectives (units), if any, were already known by some of the children. The pretest would give the teacher a general idea as to which areas of the curriculum would need emphasis, which units might be eliminated altogether, and how pupils might be grouped for instruction.

Unit Pretest--A unit pretest covering all of the criterion objectives for a unit or module diagnoses student needs by determining which objectives in the unit the students have already mastered and which they have yet to learn. In a totally individualized program, each student would be given instruction only on the objectives which he did not know. If a student showed mastery of all of the objectives in the unit, he would move on to a different unit and would take another pretest.

The pretest data could also be used to bring together students who had similar needs or showed the same degree of mastery. That is, pupils would be grouped on the basis of the objectives they knew or did not know.

In a group-paced program where the majority of students had mastered the objectives, the teacher would go on to another unit, making special provisions for any

students who did not know the objectives.

A pretest might include items on prerequisite objectives. It would thus indicate whether the pupils were ready to learn the objectives in the new unit.

Curriculum Embedded Test--The curriculum embedded test (CET) tells how the student is progressing through the unit--whether he is learning from the instruction he is receiving. The CET could be a quick quiz on material just taught, it could be a single item or measure given informally by the teacher, or it could be a practice exercise that the pupil scores himself. If a student did not pass the short curriculum embedded tests, the teacher would want to give him more detailed diagnostic tests. These might lead to instruction on prerequisites or to another mode of instruction for the same objective. Poor group results on CET's might affect the pace of instruction or prompt the teacher to use alternate methods or materials for the entire group.

Unit Posttest--The unit posttest samples all of the important criterion objectives in the unit and is used to determine whether or not students have mastered or met the performance standards for the unit objectives.

The posttest results will indicate whether there are students who need to repeat the unit before going on to another. Repetition with an individualized or multibasal approach would not mean doing the same things over again but rather working on the same objectives with alternate methods and/or materials.

In a situation where instruction is adapted to meet student needs as shown by pretests and curriculum embedded tests, there should be no failures on posttests. This assumes that the student would be given enough time to master skills at his own pace and that if he were unsuccessful with one mode of instruction, alternative methods would be available.

Table 6.1

TYPES OF TESTS

TEST TYPE	WHEN GIVEN	CONTENT AND CHARACTERISTICS	IMMEDIATE QUESTION	DECISIONS AFFECTED BY INFORMATION
Survey Test	At the beginning of school year (Pretest) When a child is new in a school At the close of the school year (Posttest)	Covers some of the objectives in the curriculum for a given level Covers the criterion objectives considered most important at that level of the curriculum	Which areas or topics of the curriculum at a given level have been mastered?	W[illegible] of the [illegible] emphasis? Ho[illegible] be grouped for instruction? Where should the new student be placed in the curriculum? Have the objectives for the year been mastered?
Unit Pretest	Just before a unit of instruction	Covers all of the criterion objectives for the unit May include items on prerequisite objectives	Has the student already mastered some or all of the objectives of the unit? Does the student have the prerequisite skills?	Which objectives should be emphasized? Which children should be grouped together for instruction? Where in sequence should instruction begin? Is some instruction in pre-requisite skills necessary?

TEST TYPE	WHEN GIVEN	CONTENT AND CHARACTERISTICS	IMMEDIATE QUESTION	DECISIONS AFFECTED BY INFORMATION
Curriculum Embedded Test	During a unit of instruction	Covers the objective or objectives just taught May consist of only a single item. Usually self-scored	Is the student learning?	Can student proceed with the next activity? Should the student spend more time on the current activity? Should instruction be changed so that student can succeed?
Unit Posttest	Immediately after a unit	Covers all of the criterion objectives for one unit	Has the student mastered the objectives of the unit?	Can the student go on to the next unit of instruction? Should the student repeat some or all of the unit?
Retention Test	Some time after completion of instruction when there has been time for other instruction to occur	Covers some or all of the objectives of a unit Follows a posttest	Has the student remembered what he learned? Can he demonstrate a skill previously achieved?	Should objectives be reviewed or retaught?

When there are failures on posttests, a number of questions can be asked. Some of these concern the tests used; some refer to the instruction itself. Here are some questions for the teacher, the reading specialist, and the curriculum planner:

1. Were students who received very low pretest scores or who failed to show progress on the CET's given tests on prerequisite objectives?

2. Was attention given to individual scores on CET's, and was action taken on negative results?

3. Was instruction on GO's broken down into steps small enough to facilitate mastery?

4. Was there flexibility so that children learned the GO's in any order which seemed logical to them, and was there recognition that the child's learning style will influence his concept of what is logical order?

5. Was sufficient practice provided, and was the practice relevant to the behavior called for in the objective?

6. Were the learning opportunities provided appropriate to the interests, developmental levels, and experience of the learners?

7. Did students get feedback on test results, and were they reinforced by recognition of their success in achieving objectives?

8. Did the items developed to test for mastery on the pretest, CET's, and posttest really measure the behavior called for in the objectives?

9. Was instruction varied or intensified on the basis of the CET's that showed some students were failing to achieve mastery?

Retention test--A retention test covers all or some of the criterion objectives on which a student has had instruction earlier in the school year. Its purpose is to check on the maintenance of skills, to find out how well the student has remembered what he had once learned. A retention test must follow a posttest given immediately after instruction if it is to produce information on remembering.

Test scores that showed loss of achievement on objectives once attained would be reason for providing review on previously learned material. This might be given to selected individuals or to an entire group depending on the extent of need and the instructional model.

Survey Posttest--A survey posttest covers all of the important criterion objectives for the course. Results tell which units students mastered and which they did not master. Results of a survey posttest might be used to determine whether a student will progress to the next level of the curriculum. Use of survey posttest results for this purpose would most likely occur with group-paced rather than individualized instruction for in the latter the student would be moving from level to level at his own pace.

Using Test Data for Decisions on Instruction and Curriculum

The above descriptions have focused on the use of various types of test data for decisions about students. The same test data can be used to make decisions about instructional practices. To reach decisions about the effectiveness of particular materials or methods of teaching, one would have to pool the data for individuals. Any one of the six test types might be used for assessing instruction. A series of curriculum-embedded tests given to children using different exercises to learn specific generic objectives might determine which of these exercises were most effective. For example, one might find out if tracing sandpaper letters aided the child's learning the alphabet. Tests of greater scope such as survey posttests would be appropriate for examining broader aspects of instruction such as the effectiveness of a phonics approach to decoding. Collecting data on pupil characteristics would add to the utility of findings on instruction.

Pretest and posttest data are helpful in assessing the adequacy of the curriculum. If, for example, an objective were consistently achieved on a pretest, one could conclude that instruction was unwarranted at the level to which the objective had been assigned. The objective might be reassigned to a lower level or deleted from the curriculum. Low pretest and posttest scores on an objective would suggest that the objective occurred too early in the curriculum or that the instruction was inadequate.

If different objectives were used for different groups of pupils in the early stages of the reading curriculum, survey tests given at more advanced stages of the curriculum could be used to determine the lasting effects, if any, of the early learning. It might be, for example, that students who were required to know the rules for short and long vowels did no better than pupils who had not learned them when it came to reading comprehension at the end of elementary school.

Test Item Construction

Having seen how many types of tests can be used in the reading program, we now turn briefly to procedures for constructing test items using criterion and generic objectives.

The first steps in test construction occur when generic objectives are selected and clustered into criterion objectives and when content elements are identified for the GO's. These materials--the CO, the associated GO's, and the content elements--provide the basis for the development of a table of specifications for a test.

Table 6.2 is an example of specifications table for a test of a single CO: Consonants, Final: Substitution.

Table 6.2

Specifications for a Test on
Criterion Objective 091
Consonants, Final: Substitution

Level 1

Criterion Objective	Generic Objectives	Content List	Inputs	Mastery
091	2-2-2-7	1-1	2	
	2-2-2-6	3-1	6	
	2-2-2-5	3-1	4	80% of all
	2-2-2-4	1-1	2	items correct
	2-2-2-3	1-1	2	(16 out of 20)
	2-2-2-2	1-1	2	
	2-2-2-1	1-1	2	
			20	

The first column of the specifications table gives the number of the criterion objective on final consonant substitution; it could be one of a set of CO's making up a unit on final consonants. The second column lists the numbers of the GO's selected for this criterion objective. The "Content List" column shows the numbers of the final consonant lists in SPPED Resource 5002 which provide content for the GO's and thus for the test items. The "Inputs" column shows how many test items are to be included for each GO; the variation in the number of inputs for the individual GO's reflects the weighting or relative importance of each GO. Finally, the "Mastery" column shows the performance standard for the criterion objective. In this case, 80% or 16 out of 20 items must be answered correctly. These specifications for the number of inputs and the level of mastery would have been drawn from a sampling criterion objective for the CO cluster.

Three GO's cited in the specifications table demonstrate how a test might cover oral stimuli and oral responses as well as paper and pencil items.

	GO	Stimulus Mode	Response
2-2-2-2	Given a word, the student says the name of the final consonant.	Visual (Printed word)	Spoken
2-2-2-4	Given orally a word, the student designates another word with the same final consonant.	Oral	Written (Marking)
2-2-2-5	Given a word and given orally a final consonant, the student substitutes the final consonant and says the word formed.	Visual and Oral	Spoken

List 1-1, which may be used for five of the seven objectives, is actually a group of lists, each of which contains words ending with the same consonant. As this is a level 1 list, the words are appropriate for a beginning reader. An excerpt from list 1-1 follows in table 6.3.

Table 6.3

Excerpt from List 1-1
Words Sublisted by Final Consonants

b	d	f	g	t
job	bed	if	egg	rabbit
tub	sled	leaf	rag	boat
sob	wood	beef	big	foot
cab	rod	chief	dog	cat
rib	wind	of	frog	bat
web	need	calf	flag	goat

The above words become the content elements for the test items. For example, a test item for GO 2-2-2-2 might read:

Teacher: "Listen to this word, and say the name of its final consonant: sled, sled."
Student: "Dee."

The teacher could, of course, use a level 1 word from any source she chose.

The second list cited in the specifications table is composed of word "families," lists of words that are the same except for their final consonants. Two such word families from list 3-1 are shown below in table 6.4.

Table 6.4

Excerpt from List 3-1
Word Families for Final Consonant Substitution

bi	sa
bib	sad
bid	say
big	Sam
bin	sap
bit	sat

A test itm for GO 2-2-2-5 might read as follows:

Teacher: "Look at the word on your paper (big), and listen to the letter I say. Then change the final consonant in the word on your paper to the letter I name, and say the new word. The letter is tee, tee. Say the new word."

Student: "Bit."

A complete specifications table for a pretest or posttest would cover all of the objectives in the unit of instruction. In the preparation of such a table, the test designer might decide that some of the objectives that had been used for instructional purposes need not be tested. Generic objective 2-2-2-1 which requires the student to respond to a word by saying another word with the same final consonant, for example, might be regarded as a less difficult variation of GO 2-2-2-4 which requires the student to listen to a word and then select from two or more printed words the one with

the same final consonant. The latter GO, 2-2-2-4, would appear on the test; the first objective, 2-2-2-1, would not.

Comprehensive Achievement Monitoring

Most of the test types previously described--survey testing, unit testing, pretesting, posttesting, and retention testing--can be combined in a single design through Comprehensive Achievement Monitoring or CAM. CAM is a computerized evaluation system with a number of different computer programs for test design, test scheduling, and reporting results at the student level, the classroom level, and the program and curriculum level. The CAM design described here applies the principle of sampling to test items and examinees.

The Item-Examinee Sampling Design

The "item-examinee" sampling design involves periodic administration of a set of tests or test forms which cover all of the objectives of a course but which are so constructed that each test or test form covers only a portion or sample of those objectives. The test schedule is so arranged that at any test administration, each test form is taken by some of the students--a sample of the examinees. At the completion of the test schedule each student will have taken every form of the test and will have been tested one or more times on every objective.

For example, consider a unit testing situation where there are 30 students in a course to be given pretests, then instruction, and then posttests on 10 objectives. Instead of giving each pupil 40 test items on the pretest (4 items per objective), we will randomly assign the test items to two forms, 20 to each form. On the pretest,

each pupil will receive one of the test forms on a random basis; the remaining test form will be received at the posttest period. When all individual data for the pretest period are combined, there will be an estimate of performance on all 10 objectives; likewise for the posttest period. No student will have received the same test items twice, and no student will have received more than two test items per objective on either test occasion. Obviously, the individual student test data for a single objective would be somewhat tenuous at either test point, but some quick arithmetic indicates that group performance on an objective at either test occasion is based on a total of 60 responses (15 students X 2 items for test form 1 + 15 students X 2 items for test form 2 at the pretest or posttest points).

This item-examinee sampling design is applicable where student performance data will be used for periodic rather than day-to-day decision making; for example, where decisions would be made once in two or three weeks. Content or item sampling is also appropriate where passing or failing a GO or CO would not depend on the student's knowing particular content. This is the case for many comprehension objectives. Comprehension of a particular word or passage may be of little interest to the reading teacher; what is important is the extent of the student's comprehension as demonstrated by his performance on samples from a large pool of words and selections.

Demonstration of Item-Examinee Sampling

Growth in reading vocabulary is a goal which lends itself very well to a demonstration of the item-examinee sampling design. Appropriate test items for vocabulary acquisition would be derived from the generic objectives shown below with their CO descriptors:

CO 149: Sight Vocabulary

3-1-49	Given a word from a familiar book, the student reads it orally.

CO 147 Word Knowledge: Using and Defining Words

3-1-13	Given a familiar word, the student writes a sentence using it.
3-1-14	Given a familiar word, the student says a sentence using it.
3-1-15	Given a familiar word, the student writes its meaning.
3-1-16	Given a familiar word, the student designates its meaning.
3-1-17	Given a definition, the student writes the word defined.
3-1-18	Given a definition, the student designates the word defined.

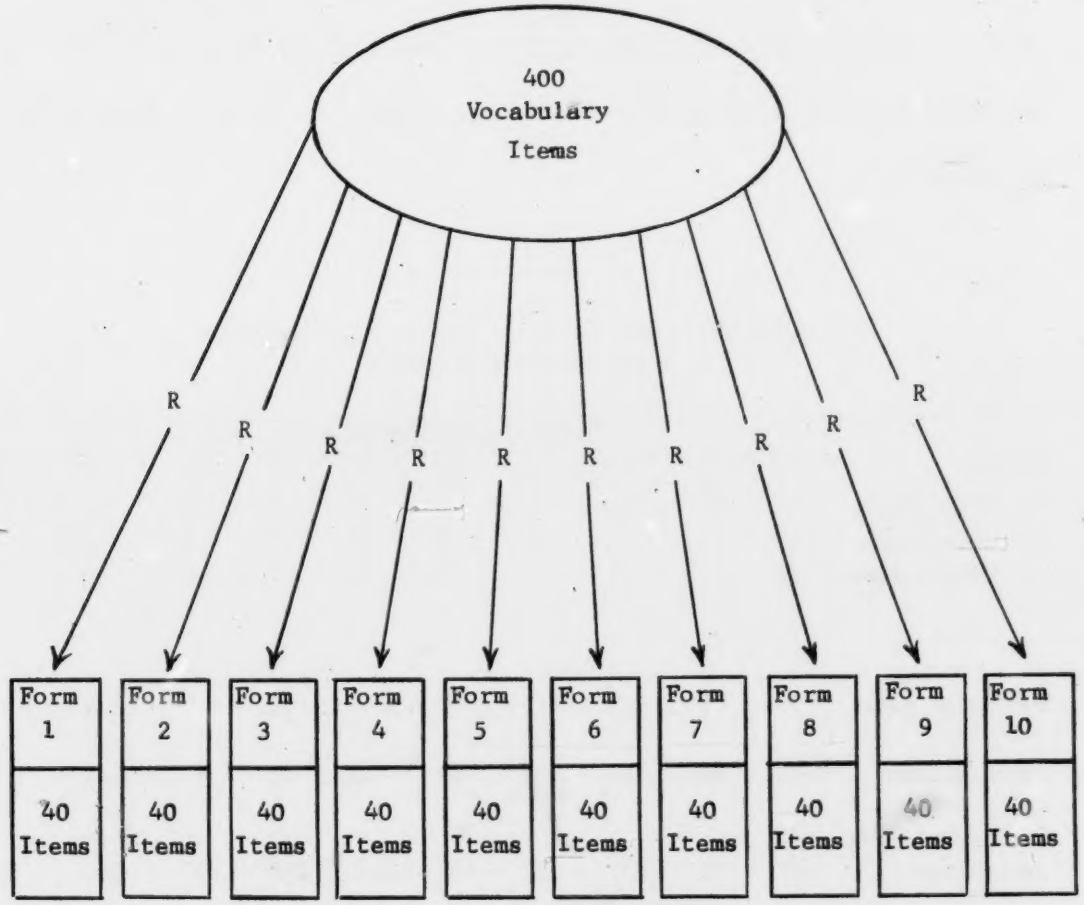
Suppose that the first half of an advanced basal reader introduces 400 new words. If an appropriate test item were written for each word, one would have a pool of 400 test items.

Now consider that the first half of the basal reader is to be used from the opening of school in September through the end of January. In this semester of approximately 21 weeks, one could have 10 test administrations, one at the end of every 10 days of instruction.

With a schedule of 10 test administrations, the pool of 400 test items could be randomly divided into 10 different test forms with 40 items each as shown in figure 6.3.

Figure 6.3

Sampling of Vocabulary Items
for Test Form Development



Test Forms

R = Random assignment of items to test forms

Finally, consider that there are 30 pupils in each of several classes and that every pupil is to be tested 10 times in the semester. With 10 different test forms, each pupil could have a different test form at each test administration and would eventually be tested on all 400 vocabulary items. In a given class, three students would take the same test form at any one test administration. Because of the random assignment of test forms, no two students should have the same sequence of test forms for the semester. How test form order would vary is demonstrated by the test schedule for one class shown in part in table 6.5.

Table 6.5

Assignment of Test Forms for Vocabulary Acquisition
September 15 - January 31

	Test Forms by Test Administration									
Student	1	2	3	4	5	6	7	8	9	10
1. Mary Adams	3	10	4	1	2	7	9	8	6	5
2. John Burke	10	2	1	4	7	9	8	6	5	3
3. Peter Cayce	6	2	3	1	5	4	7	8	10	9
.										
.										
.										
30. Helen Zeno	5	8	7	2	1	4	10	9	3	6
Items per form	40	40	40	40	40	40	40	40	40	40
Cumulative items per student	40	80	120	160	200	240	280	320	360	400
Total Items Tested	400	400	400	400	400	400	400	400	400	400
Cumulative Responses per Class	1200	2400	3600	4800	6000	7200	8400	9600	10800	12000

According to this schedule, Mary Adams gets form 3 at the first test administration, form 10 at the second, and so on. In other words, Mary gets a different sample of 40 words on a test every two weeks. The figures after "Cumulative Items per Student" in table 6.5 show that the "Total Items Tested" at each administration was 400 or the entire pool.

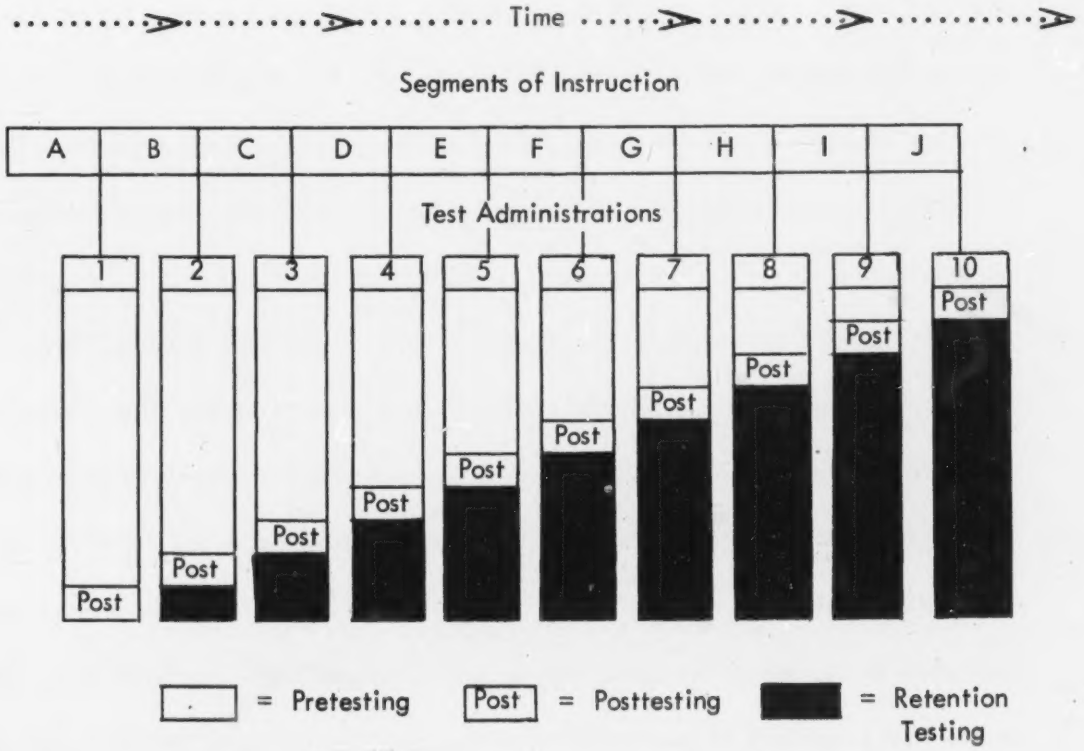
We have asserted that CAM could accomplish several types of testing at the same time. The truth of this will be demonstrated by a further look at the vocabulary acquisition test. Assuming that the 400 new vocabulary words were introduced gradually through the semester, the first test administration would be largely a pretest; only items on words taught in the first two weeks of school could be considered a posttest. There would be no retention testing until the second test administration when some time would have elapsed since the initial instruction. With each successive test administration, fewer and fewer items would be classified as "pretest," and more and more items would be labeled "retention test." The proportion of items that could be called "posttest" would probably remain relatively constant if the new words were distributed equally through the basal reader. This shift from pretest to posttesting would occur on individual test forms as well as on the ten forms combined. The relationship between pre-, post-, and retention testing on the vocabulary acquisition test is shown in figure 6.4. The letters in the segments of instruction below the time line represent the new words taught between test administrations. The numbered boxes represent the test administrations themselves.

A single administration of one of the item-examinee sampling test forms for vocabulary acquisition would not produce diagnostic data of immediate use for a given individual. Any one form tests only 10 percent of the total new vocabulary for the

semester, and only a small proportion of the items on a given form refer to, or "post-test," the vocabulary content most recently taught. Similarly only a small proportion of the items pretest the words to be taught before the next test administration.

Figure 6.4

Pretesting, Posttesting, and Retention Testing in an Item-Examinee Sampling Design With 10 Administrations of a Test for Vocabulary Acquisition



The sampling approach is useful where decision making on the individual student level does not have an immediate, reactive, or day-to-day character. Moreover, the sampling approach has certain advantages such as brevity of testing and the ability to

generate large amounts of data useful for decision making above the individual student level. This was demonstrated in table 6.5 where it was shown that on each test administration all 400 vocabulary items would be tested. With three children in a class of 30 taking each form of the test, there would be a total of 1200 responses on the vocabulary items at each testing. This amount of data would have been attained with at most 15 to 20 minutes of testing per student. In the course of the semester, one would attain a grand total of 12,000 responses for the class. With several classes, the number of responses would be many times greater.

Reporting Results with an Item-Examinee Sampling Design

One way of reporting the results of CAM sampling tests is to show the proportion of correct responses to items on a given objective. Table 6.6 is a matrix of such data for a test in which there were several items for each of six objectives. (The situation in this example is somewhat different from the previous vocabulary test demonstration where the acquisition of each new word was an objective in itself.)

The first column of numbers in table 6.6 lists the objectives covered by the test. The remaining columns show the percentage of correct responses per objective at each test administration. Test administrations are shown at the top. The data under "Test Administration 1" show the results across students for each objective shortly after instruction had started. The proportions of items passed on all of the objectives were very low so the teacher could plan on emphasizing all objectives equally. Reading horizontally across a row, one can follow the effect of instruction on an objective. The underlined percentage in a row indicates the point of instruction on the objective. The data on objective 100 show that performance was low to start, with only 15 percent

of the items answered correctly; performance improved somewhat with instruction as shown by a rise to 30 percent correct responses at the second test administration. Performance reached criterion (generalized mastery) at period five and remained stable thereafter.

Table 6.6

Percentage of Correct Responses on Test Items Grouped by Objectives

Objective	Test Administration						
	1	2	3	4	5	6	7
100	15	30	35	30	85	80	85
200	10	10	70	65	60	55	50
300	5	10	15	65	60	65	70
400	0	0	0	0	70	75	80
500	5	7	10	15	10	65	65
600	7	9	10	12	15	0	70

The underlining indicates that teaching has just occurred for the objective.

The performance data (proportions of items answered correctly by objective) given in figure 6.6 are analogous to the separate pretest, posttest, and retention results discussed earlier. The administration of such tests on a non-sampling basis, it should be recognized, is relatively more costly in terms of the time and resources consumed. However, the context of decision making in reading instruction often requires the more detailed testing exemplified by the individual pretest or posttest. The sampling approach discussed here is appropriate in other decision making contexts and has the advantage of providing several types of test data at lower costs.

Practice in Reading CAM Reports

This brief foray into evaluation as applied in reading will be concluded by a limited examination of computer reports produced in CAM. Two types of reports will be presented with brief explanations. With them will be some exercises on the interpretations, conclusions, and decisions that can be drawn from these reports.

Figure 6.5 gives computer generated reports for two different students who took the same form of a CAM test on 14 reading objectives. These reports indicate that it was the 10th test administration and that form 8 was given to both students, Fannie Kinnard and Judy Harrison.

The first summary information on the reports, "Percentage correct on all items," shows the proportion of correct responses on this test form. This figure would have been a score for pretest, posttest, and retention items if this were an earlier test administration. However, since this was the last of 10 test administrations, the test had only posttest or retention items.

The next summary information, "Percentage correct on yes items," refers only to items on this test form that had been previously taught. Again, because this was the final testing, instruction had been given on all objectives. This accounts for the percentages on both "all" and "yes" items being the same on each of the students' reports--100 percent for Fannie Kinnard in both cases, and 24 percent for Judy Harrison in both cases.

In the body of the reports, the two columns on the left list the objectives by number. Eleven objectives are listed twice showing that there were two test items for each of these objectives. The plus (+) and minus (-) signs next to the objective numbers show whether or not the test items were answered correctly. The "Yes" entries

Figure 6.5

Examples of Student Reports Generated by Computer

```
KINNARD FANNIE          63421    SECTN 6   MR. JONES

        TEST ADM 10 - 1/23/82                      FORM  8
PERCENTAGE CORRECT ON ALL ITEMS IS 100
PERCENTAGE CORRECT ON YES ITEMS IS 100

                                        TEST PCT COR PCT COR
 OBJ A INS        OBJ A INS             ADM  TOTAL    YES
4101 + YES       5501 + YES              1    12       66
4102 + YES       5501 + YES              2    15       65
4103 + YES       5502 + YES              3    20       75
5101 + YES       5502 + YES              4    35       90
5101 + YES       5601 + YES              5    50      100
5102 + YES       5601 + YES              6    45       30
5102 + YES                               7    65       95
5201 + YES                               8    75       95
5201 + YES                               9    90      100
5202 + YES                              10   100      100
5202 + YES
5301 + YES
5301 + YES
5302 + YES
5302 + YES
5401 + YES
5401 + YES
5402 + YES
5402 + YES
```

```
HARRISON JUDY           63414    SECTN 6    MR. JONES

        TEST ADM  10 - 1/23/82                 FORM  8
PERCENTAGE CORRECT ON ALL ITEMS IS  24
PERCENTAGE CORRECT ON YES ITEMS IS  24

                                        TEST PCT COR PCT COR
 OBJ A INS        OBJ A INS             ADM  TOTAL    YES
4101 + YES       5501 - YES              1    4        0
4102 + YES       5502 - YES              2    2       45
4103 + YES       5502 - YES              3   10       50
5101 - YES       5601   YES              4   10       40
5101 - YES       56     YES              5   15       35
5102 - YES                               6   15       30
5102 - YES                               7   15       25
5201 + YES                               8   20       25
5201 + YES                               9   25       30
5202 - YES                              10   24       24
5202 - YES
5301 + YES
5301 - YES
5302 - YES
5302 - YES
5401 - YES
5401 - YES
5402 - YES
5402 - YES
5501 - YES
```

in the third column labeled "Ins" indicate that instruction had been given on the objectives. Again, because this was the final testing, there was no possibility of a negative entry in this column.

The columns on the right of the individual reports show the students' results for all 10 test administrations. The percentages correct on all items (Total) and on those for which instruction had been received (Yes) are given for each test administration.

Examine the reports for Fannie Kinnard and Judy Harrison in detail and write down your answers to the following questions:

1. What conclusions would you draw about each student in the early stages of learning (test administrations 1-2-3)?

   _____
   _____
   _____

2. What conclusions would you draw about posttest performance at test administration 10?

   _____
   _____
   _____

3. How well did each student progress in the course?

   _____
   _____
   _____

4. Would the progress records of each student lead to different decisions before the conclusion of instruction on the objectives?

   _____
   _____
   _____

Now compare the answers you have written with the following responses:

1. Both Kinnard and Harrison knew little about the reading objectives at the beginning of the course.

2. Fannie Kinnard's performance at test administration 10 is maximal; she answered all 25 items correctly. Judy Harrison shows a very low level of performance. She answered only 24% or six of the items correctly.

3. Kinnard showed adequate or good progress, doing especially well in the latter stages of instruction. Harrison showed a tendency to gain for a while on items for which instruction was given, but her performance deteriorated badly before the conclusion of the course.

4. Kinnard's record suggests that the instruction fitted her needs. Harrison's reading development indicates that a detailed analysis should have been made of her performance through further testing at test administration 3 or 4.

The final exercise for the chapter involves group results. Figure 6.6 shows group data for the reading objectives on which Fannie Kinnard and Judy Harrison were tested. These data were obtained by summarizing test results across all test forms and students in a class at each test administration. In this case, the data for each objective are displayed in terms of pretest, posttest, and retention scores. The first three objectives are prerequisites from the preceding year of instruction in reading; therefore the results on test items for these objectives are always retention scores. All other objectives are new--instruction has not been given. Test items on these new objectives produce only pretest scores until instruction occurs. The first test administration after instruction gives a posttest score. All subsequent testings produce retention scores.

Objectives 5101 through 5202 were taught after the first test administration and therefore have pretest results on only the first test administration. Note that posttest scores for 5101 through 5202 occur only once and that the remaining scores on these objectives are for retention. The number of pretest and retention scores varies as a function of the placement of the objective at a point in time, either early or late in the semester.

Now examine figure 6.6 and write down the answers to these questions:

1. What would you conclude about the need for instruction on prerequisites (the first three objectives)?

_____

_____

_____

Figure 6.6

COMPREHENSIVE ACHIEVEMENT MONITORING - GROUP SUMMARY REPORT
PERCENTAGE OF CORRECT RESPONSES

ORCHARD HILL ELEMENTARY SCHOOL — ALL OF MR. JONES' STUDENTS

CONTENT GROUP		TEST ADMINISTRATION 1	2	3	4	5	6	7	8	9	10
OBJECTIVE 4101	PRE	0	0	0	0	0	0	0	0	0	0
	POST	0	0	0	0	0	0	0	0	0	0
	RETN	90	90	90	95	85	50	90	90	90	90
OBJECTIVE 4102	PRE	0	0	0	0	0	0	0	0	0	0
	POST	0	0	0	0	0	0	0	0	0	0
	RETN	85	90	95	100	100	95	90	100	90	95
OBJECTIVE 4103	PRE	0	0	0	0	0	0	0	0	0	0
	POST	0	0	0	0	0	0	0	0	0	0
	RETN	98	90	90	100	90	95	95	90	100	95
OBJECTIVE 5101	PRE	40	0	0	0	0	0	0	0	0	0
	POST	0	86	0	0	0	0	0	0	0	0
	RETN	0	0	82	76	78	74	76	72	80	82
OBJECTIVE 5102	PRE	31	0	0	0	0	0	0	0	0	0
	POST	0	72	0	0	0	0	0	0	0	0
	RETN	0	0	82	88	82	87	82	74	76	76
OBJECTIVE 5201	PRE	74	0	0	0	0	0	0	0	0	0
	POST	0	80	0	0	0	0	0	0	0	0
	RETN	0	0	90	90	80	90	90	90	90	90
OBJECTIVE 5202	PRE	78	0	0	0	0	0	0	0	0	0
	POST	0	82	0	0	0	0	0	0	0	0
	RETN	0	0	90	90	90	100	90	90	100	100
OBJECTIVE 5301	PRE	21	16	20	34	0	0	0	0	0	0
	POST	0	0	0	0	66	89	0	0	0	0
	RETN	0	0	0	0	0	0	76	82	82	78
OBJECTIVE 5302	PRE	18	20	20	16	0	0	0	0	0	0
	POST	0	0	0	0	42	49	56	48	0	0
	RETN	0	0	0	0	0	0	0	0	80	82
OBJECTIVE 5401	PRE	10	16	12	22	26	18	0	0	0	0
	POST	0	0	0	0	0	0	58	76	0	0
	RETN	0	0	0	0	0	0	0	0	74	83
OBJECTIVE 5402	PRE	14	12	15	20	18	24	36	0	0	0
	POST	0	0	0	0	0	0	0	62	0	0
	RETN	0	0	0	0	0	0	0	0	78	75
OBJECTIVE 5501	PRE	16	38	42	46	40	38	46	51	0	0
	POST	0	0	0	0	0	0	0	0	82	0
	RETN	0	0	0	0	0	0	0	0	0	80
OBJECTIVE 5502	PRE	10	14	24	18	12	24	32	28	0	0
	POST	0	0	0	0	0	0	0	0	78	83
	RETN	0	0	0	0	0	0	0	0	0	0
OBJECTIVE 5601	PRE	0	12	10	0	0	0	0	0	0	0
	POST	0	0	0	34	16	22	0	0	0	0
	RETN	0	0	0	0	0	0	24	30	31	28

2. What decision would be made about instruction on 5101?

3. By comparison with 5101, what decision would be made about 5201? Should it have been included in the course?

4. How would you interpret the data for 5302?

5. What decision would you make in relation to the data for 5601?

Now compare your answers to questions on the group data with the answers given below.

1. Instruction on the prerequisites was not needed.

2. This is typical performance for a CO in reading, showing adequate teaching.

3. Objective 5201 should have been deleted from the course or given brief review.

4. The improved results on the last test administration suggest delayed learning from outside sources.

5. This objective needs review, required more intensive teaching to begin with, or should be deleted from the course.

Conclusion

The process of evaluation as described in this chapter provides the teacher with feedback for decision making which will aid the process of instruction. It is for this reason that the discussion was initiated with the statement that evaluation in education was concerned with decision making. A test is not the beginning, middle, or end of instruction; it is one of a series of continuous checkpoints which provide information for the decision maker. The process of decision making involves reading and interpreting performance data, analyzing and determining the most probable cause of the performance, and then selecting from among a number of alternatives that which is likely to aid the performance. Some people call this "diagnosis and prescription," and diagnostic-prescriptive teaching is the goal for reading instruction.

Appendix A

SPPED RESOURCE LISTINGS AND REQUESTS

Resources

SPPED

SPPED RESOURCE LISTINGS AND REQUESTS

Robert P. O'Reilly
Project Director

Project Staff

Ruth Salter	Reading BOIR
Howard Berkun	Implementation
Gerlach van Gendt	Mathematics BOIR
Martha Zakis	Reading BOIR

Telephone 518 · 474-5501

System for Pupil and Program Evaluation and Development

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of School and Cultural Research
Albany, New York 12224

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_____	Primary Level
_____	Intermediate Level
_____	Junior High Level
_____	Secondary Level
Downers Grove Science	
_____	Primary Level
_____	Intermediate Level
_____	Junior High Level
_____	Secondary Level
Downers Grove Social Studies	
_____	Primary Level
_____	Intermediate Level
_____	Junior High Level
_____	Secondary Level
Downers Grove Language Arts	
_____	Primary Level
_____	Intermediate Level
_____	Junior High Level
_____	Secondary Level
IOX Reading Objectives	
_____	Level 4-6
IOX Math Objectives	
_____	Level K-3
Hopkins Mathematics	
_____	Level 3-4
_____	Level 5
_____	Level 6
_____	Level 8
_____	Level 9
_____	Level Geometry
_____	Level Algebra II
_____	Level Senior Math

No. of Copies	Objectives
Harrigans Mathematics	
_____	Level 9
_____	Level 11
_____	Level 12
Greece Mathematics	
_____	All Levels
NYSED Mathematics	
_____	Level K-4
_____	Level 5
_____	Level 6
_____	Level 7
_____	Level 8
_____	Level 9
_____	Users Manual
_____	Content Classification System
Brentwood Mathematics	
_____	Level 6
Guilderland Mathematics	
_____	Level K-8
NYSED Reading	(Special Request form necessary)
_____	SPPED Resource 5000: Generic Objectives (All levels)
_____	SPPED Resource 5001: Criterion Objectives (All levels)

TRAINING MATERIALS AVAILABLE

No. of Copies	Manuals

Training Manuals

_____ 0200-Needs Analysis
_____ 0400-Concept of Behavioral Objectives
_____ 0600-Understanding the Kinds of Objectives in SPPED
_____ 0800-Selection of Objectives
_____ 1000-Modification of Objectives
_____ 1200-Classification of Objectives
_____ 1400-Instructional Models
_____ 1600-Structuring Objectives for Course Development
_____ 1800-Relation of Objectives to Instructional Models
_____ 2000-Impact of CAM on CO's
_____ 2200-Teacher Codes CO's
_____ 2400-Choosing Course Curriculum
_____ 2600-Criterion Referenced Testing
_____ 2800-Introduction to CAM
_____ 3000-Application of CAM to Decision Making
_____ 3200-How Does CAM Relate to Course Structure
_____ 3400-Summary of CAM
_____ 3800-Specifications for CAM Tests
_____ 4200-Construction of Achievement Tests

Training Reports

_____ Teacher Simulation (Educational Decision-Making Simulation)
_____ Parent Simulation-An Introducation to CAM: Parent Learning Module
_____ Using CAM in the Classroom by Mary Alice Wilson
_____ How to Use CAM
_____ What is CAM
_____ Selecting and Using Objectives
_____ Training Manual for the Use of Objectives in the Bank of Objectives, Items, and Resources in Reading
_____ A Self Instructional Module in the Goals Process
_____ Self Instructional Module for Learning: The Hutchinson Method of Operationalizing a Goal or Intent

TECHNICAL PAPERS

No. of Copies	Title
_____	Criterion Referenced Testing: No More Losers, No More Norms, No More Parents Raising Storms by Gene R. Hawes
_____	The Development of the New York State Bank of Reading Objectives
_____	Alternatives to Accountability
_____	Characteristics of Standardized Tests as Evaluation Instruments
_____	A Formative Evaluation for Classroom Instruction
_____	CAM: A Technique for Instructional Management

RESOURCE PAPERS

_____	An Objective and Item Banking System: Paper-Based by Pinsky, White, & Gorth
_____	A Manual for a Local Paper-Based SPPED Bank
_____	A CMI Model for an Individualized Learning Program in Ninth Grade Science
_____	Project CAM Bibliography 1971
_____	Implementing SPPED: Services Offered by the BOCES Centers
_____	A Chart for Identifying Decisions Related to Student Progress and Program Evaluation
_____	The SPPED Bank of Reading Objectives: A Brief Description
_____	Guidebook for Teacher Use in Individualizing Instruction Through Use of Unipacs

MISCELLANEOUS

_____	A Brief Description of SPPED
_____	SPPED Installations
_____	Outline of 145 Goals of Elementary School Education

DOCUMENTATION

_____	SPPED Computer Programs and Documentation (A Short Description)

SPPED RESOURCE REQUESTS

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District Popular Name (if different) _____

Contact Person _____

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Phone _____

Intended Use _____

_____

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Appendix B

THESAURUS

THESAURUS

Allograph:	A letter or a combination of letters in a particular shape.
Cardinal number:	A number, e.g., 1, 3, 8, which is used in simple counting and which indicates how many elements there are in an assemblage.
Category:	A group or set sharing the same characteristic[s]. Used interchangeably with Class.
Class:	See Category.
Complete:	To finish an incomplete stimulus by supplying what is missing. Used in conjunction with other indicators, e.g., "Given orally the first part of a sentence about wishes, the student completes and says the sentence."
Common environmental, nonspeech sounds:	An ordinary sound, other than the human voice, that one might encounter in the home, neighborhood, or school, e.g., the sound of a vacuum cleaner, doorbell, airplane, dog barking.
Consonant blend:	See Consonant digraph.
Consonant digraph:	A combination of consonants which frequently occur together within a syllable, e.g., bl, gr, th, ch. No distinction is made between consonant blends and consonant digraphs.
Copy:	To reproduce a given stimulus with the model present.
Designate:	To circle, underline, cross out, or mark in some way, one or more of a finite number of choices, leaving a physical record of the choice. Usually implies a condition where a number of choices are given. The condition might be a multiple choice or true/false item, or a sentence or paragraph on which the student makes physical marks. Designate may also mean to mark two or more items to show order.
Determiner:	A word belonging to a group of limiting noun modifiers which includes articles, e.g., a, the; demonstratives, e.g., this, that; possessives, e.g., his, Jane's; and other restrictive words, e.g., any, both, no, several. A determiner occurs before a descriptive adjective as in "that green house."
Diphthong:	See Vowel digraph.

Familiar:	Previously presented in the instructional sequence.
Flash presentation:	A short visual exposure of a word, phrase, or sentence written on a card.
Heteronym:	One of two or more words spelled the same but pronounced differently and having different meanings, e.g., cŏntract, contrăct, bass, bass.
Homonym:	One of two or more words spelled the same and pronounced the same, but having different meanings, e.g., a pool of water, a game of pool. A homonym is one kind of homophone.
Homophone:	One of two or more words which are pronounced the same but differ in spelling and/or meaning, e.g., so, sew; to, too, two; pool, pool.
Illustration:	A stylized rendering of an object.
Incomplete:	Having an element missing. An incomplete sentence or phrase might have a word or words missing; an incomplete word would have a letter or letters missing.
Inflection:	A word ending, e.g., ed, ing, s indicating case, gender, number, tense, person, mood, or voice; any change in the form of a word that indicates a distinction of case, number, tense, etc; e.g., a word with an ending such as rained, raining, pots; an irregular past tense as sang; an irregular plural, as geese.
Known:	See Familiar.
Letter combination:	Two or more letters together which are not consonant or vowel digraphs, e.g., ah, ca, rm.
List of words:	See Word list.
Locate:	To search for an object and point to it, e.g., to locate a title in the card catalog, Cf., Point to.
Multi-meaning word:	A word with more than one meaning.
New:	Being presented for the first time in the instructional sequence, as in "Given a new word."
Number sentence:	An equation.

Order:	To place in a predetermined sequence or hierarchy.
Ordinal number:	A number designating the position of an item in an ordered sequence, e.g., first, second, third.
Phoneme:	Speech sound, utterance; a member of the set of the smallest units of speech that serve to distinguish one utterance from another.
Phonogram:	A character or symbol used to represent a word, syllable, or phoneme.
Point to:	To place one's finger on an object or to use one's arm, hand, or finger to show direction or placement. Cf., Locate.
Print:	To use manuscript lettering.
Say:	To give an oral response.
Say things about:	To describe or discuss orally.
Selected word list:	An official word list, e.g., the Dolch list.
Selection:	Something to be read which is more than one sentence in length.
Specified, specific:	A stimulus or portion of a stimulus to which a student's attention is called orally or by special marking of printed material.
Spell:	To give the letters of a word in sequence. Used with "orally" to indicate a spoken response; followed by writes, e.g., "spells (writes)," for a written response.
Tell:	To orally give an account.
Verb agent:	The item or person performing the action of a verb; the noun formed by adding er to a verb, e.g., do, doer.
Vowel controller:	A consonant (usually l or r) which changes the pronounciation of a vowel, e.g., r in car.
Vowel digraph:	A combination of two vowels, e.g., ea, ou, oi, ew. No distinction is made between vowel digraphs and diphthongs.
Word list:	A written list of words which is not an official list. Cf., Selected word list.

Write:	To give a short written response such as a word, a sentence, a letter, a number, or a punctuation mark. Sometimes used with the verb "lists" to indicate a series of short responses, e.g., "writes (lists)"; a written response may be in either manuscript or cursive script unless the form is prescribed by the objective as in "the student writes [letters] in cursive." Cf., Write about.
Write about:	To give a written response that involves some composition such as describing, explaining, analyzing, and so forth, or a combination of these.

Appendix C

SKILL CATEGORY STRUCTURE AND CODES FOR READING OBJECTIVES

SKILL CATEGORY STRUCTURE AND CODES
FOR READING OBJECTIVES

I. MULTISENSORY READINESS SKILLS	001
A. Auditory Skills	001 001
1. Acquire Auditory Discrimination	001 001 001
Differentiate likenesses and differences in sounds	001 001 001 001
Identify common environmental sounds	001 001 001 002
Differentiate directions and sources of sounds	001 001 001 003*
Distinguish among sound characteristics	001 001 001 004
Specify the number of syllables in words	001 001 001 005
2. Expand Auditory Memory	001 001 002
Listen for a series	001 001 002 001
Recall and follow directions	001 001 002 002
Listen for specific details	001 001 002 003
3. Reproduce Auditory Stimuli	001 001 003
Imitate sounds	001 001 003 001
Repeat oral selections	001 001 003 002
Repeat variations in pitch, stress, and juncture	001 001 003 003
4. Acquire Listening Comprehension	001 001 004
Listen for main ideas	001 001 004 001
Listen for details	001 001 004 002
Identify sequence	001 001 004 003
Interpret descriptive language	001 001 004 004
Identify relationships	001 001 004 005
Recognize emotions	001 001 004 006
B. Oral Language	001 002
1. Acquire Oral Language Skills in Semantics	001 002 001
Utilize a vocabulary appropriate to the learner himself, his home and family, his school and play activities, his community and environment.	001 002 001 001

*There are no Generic Objectives in this category.

Acquire Oral Language Skills in Semantics (cont'd.)

Interpret, classify, and relate objects, pictures, and spoken words	001 002 001 002
Utilize vocabulary appropriate to needs and emotions	001 002 001 003
Interpret number concepts	001 002 001 004
Compare diverse situations	001 002 001 005
Establish and describe sequences of events	001 002 001 006
Determine cause and effect and predict outcome	001 002 001 007
Use new words	001 002 001 008
Relate and interpret experiences	001 002 001 009

2. Acquire Aural-Oral Language Skills in Phonology — 001 002 002

Identify, compare, and reproduce beginning consonant sounds (single, blends, digraphs)	001 002 002 001
Identify, compare, and reproduce final consonant sounds (single, blends, digraphs)	001 002 002 002
Identify, compare, and reproduce medial consonant sounds (single, blends, digraphs)	001 002 002 003
Identify, compare, and reproduce initial, final, and medial consonant sounds (single, blends, digraphs)	001 002 002 004
Identify, compare, and reproduce vowel sounds (short, long, digraphs, diphthongs)	001 002 002 005
Identify, compare, and reproduce rhyming words	001 002 002 006

3. Acquire Oral Language Skills in Syntax — 001 002 003

Identify and construct substitutions of parts of speech (nouns, verbs, pronouns, adjectives, adverbs) in simple sentences	001 002 003 001
Identify and construct multiple substitutions of parts of speech (nouns, verbs, adjectives, and adverbs) in simple sentences	001 002 003 002
Recognize and use complete sentences (past, present, and future forms)	001 002 003 003
Identify and construct sentences with compound subjects, verbs, adjectives, adverbs, or pronouns	001 002 003 004
Identify and use subordinators and coordinators	001 002 003 005

Acquire Oral Language Skills in Syntax (cont'd)

Identify and use prepositions	001 002 003 006
Identify and use determiners	001 002 003 007
Use auxiliary words	001 002 003 008
Identify and construct transformations	001 002 003 009

4. Acquire Oral Language Skills in Morphology — 001 002 004

Identify and form plurals	001 002 004 001
Use correct verb form	001 002 004 002
Use contractions	001 002 004 003
Use compound words	001 002 004 004
Use positive, comparative, and superlative forms of adjectives	001 002 004 005
Use of possessive forms of nouns and pronouns	001 002 004 006
Use verbs to form agents	001 002 004 007
Use inflected endings	001 002 004 008

C. Body Awareness — 001 003

Identify body parts, surfaces, and functions	001 003 001
Identify position and direction in space	001 003 002

D. Visual Skills — 001 004

1. Develop Visual Perception — 001 004 001

Acquire visual discrimination	001 004 001 001
Develop perceptual speed	001 004 001 002
Develop sense of spatial relations	001 004 001 003

2. Develop Visual Memory — 001 004 002

3. Develop Visualization Skills — 001 004 003

E. Coordination Skills — 001 005

Develop eye-hand coordination	001 005 001

II.	DECODING SKILLS	002
A.	Recognize and Use Letters of the Alphabet	002 001
	Recognize manuscript letters	002 001 001
	Recognize cursive letters	002 001 002
	Recognize alphabetical order	002 001 003
	Identify vowels and consonants	002 001 004
	Use Letters	002 001 005
B.	Recognize Sound Symbol/Symbol Sound Relationships (Phonics)	002 002
	Identify initial single consonants	002 002 001
	Identify final single consonants	002 002 002
	Identify medial single consonants	002 002 003
	Identify initial consonant digraphs	002 002 004
	Identify final consonant digraphs	002 002 005
	Identify medial consonant digraphs	002 002 006
	Identify initial consonant blends	002 002 007**
	Identify final consonant blends	002 002 008**
	Identify medial consonant blends	002 002 009**
	Identify consonant sounds (single, digraphs, and blends)	002 002 010
	Identify short vowel sounds	002 002 011
	Identify long vowel sounds	002 002 012
	Identify vowel controllers	002 002 013
	Identify vowel digraphs	002 002 014
	Identify vowel diphthongs	002 002 015*
	Identify vowel sounds (short, long, etc.)	002 002 016
	Identify silent letters	002 002 017
	Letter(s)/Sound Correspondence	002 002 018
C.	Apply Rules of Spelling and Mechanics	002 003
	Recognize regular spelling patterns	002 003 001*
	Recognize variant spelling patterns	002 003 002*
	Apply phonic generalizations	002 003 003
	Apply rules of punctuation and capitalization	002 003 004
D.	Recognize the Division of Words into Units of Meaning (Structural Analysis)	002 004
	Identify compound words	002 004 001
	Identify inflectional endings	002 004 002
	Identify contractions	002 004 003
	Identify abbreviations	002 004 004
	Identify syllabication and word accents	002 004 005
	Identify prefixes, suffixes, and roots	002 004 006

*There are no Generic Objectives in this category.

**Consonant blends are covered by generic objectives for consonant digraphs. See definition of consonant blend and consonant digraph in appendix B.

III.	VOCABULARY SKILLS	003
	A. Incorporate listening and speaking skills into reading vocabulary	003 001
	B. Recognize and use synonyms, homonyms, antonyms, and heteronyms	003 002
	C. Words and context	003 003
	D. Recognize historical origins	003 004
	E. Recognize and use nonliteral language	003 005
	F. Recognize denotation, connotation, and nuance	003 006
	G. Use a systematic, continuing method of word study to increase vocabulary	003 007*
IV.	COMPREHENSION SKILLS	004
	A. Literal Comprehension	004 001
	Identify main ideas and major concepts	004 001 001
	Find and relate details	004 001 002
	Recognize sequence of ideas	004 001 003
	B. Interpretation	004 002
	Understand relationships	004 002 001
	Recognize cause and effect	004 002 002
	Make inferences	004 002 003
	Interpret figurative and descriptive language	004 002 004
	Recognize and interpret emotional reactions	004 002 005
	Identify and arrive at conclusions and generalizations	004 002 006
	Compare and contrast information and ideas	004 002 007
	Evaluate ideas and information	004 002 008
	Develop critical reading skills	004 002 009
	Develop oral reading skills	004 002 010
	C. Attitude Toward Reading	004 003
	Take proper care of reading materials	004 003 001*
	Read for enjoyment	004 003 002
	Appreciate reading	004 003 003*
	Relate personally to reading	004 003 004

*There are no Generic Objectives in this category.

V.	LOCATION AND STUDY SKILLS	005
A.	Recognize and Use Textbook Aids	005 001
	Title page	005 001 001
	Copyright	005 001 002
	Format	005 001 003
	Table of contents	005 001 004
	Section and paragraph headings	005 001 005
	Italics	005 001 006
	Boldface type	005 001 007
	Index	005 001 008
	Appendix	005 001 009
	Introduction or preface	005 001 010
	Overviews	005 001 011
	Summaries	005 001 012
	Bibliographies	005 001 013
	Glossary	005 001 014
	Footnotes	005 001 015
	Pictorial and graphic representations	005 001 016
	Pronunciation keys	005 001 017
	Language abbreviations	005 001 018
	Marginal notes	005 001 019
	List of suggested readings	005 001 020
	Answer keys	005 001 021
	Etymologies	005 001 022
B.	Identify and Use Library Resources	005 002
	Organization and card catalogue	005 002 001
	Location of materials	005 002 002
C.	Identify and Use Other Sources of Information	005 003
	Dictionaries	005 003 001
	Encyclopedias	005 003 002
	Magazines	005 003 003
	Newspapers	005 003 004
	Maps and atlases	005 003 005
	Graphs, charts, tables, diagrams	005 003 006
	Pictures	005 003 007
	Specialized reference materials	005 003 008
D.	Use Effective Study Procedures	005 004
	Follow directions	005 004 001
	Determine appropriate sources of information	005 004 002
	Skim for general information	005 004 003

Use Effective Study Procedures (cont'd)

Read for main ideas	005 004 004
Read for details	005 004 005
Locate summary sentences or paragraphs	005 004 006
Increase reading rate	005 004 007
Adapt reading rate to nature, purpose, and difficulty of material	005 004 008
Survey and identify organization of material	005 004 009*
Recall information	005 004 010
Appraise adequacy of information and evaluate sources for authenticity and reliability	005 004 011

E. Organize Materials — 005 005

Sequence information	005 005 001
Classify information according to identifiable rationale, criteria, or system	005 005 002
Write summaries	005 005 003
Take notes	005 005 004*
Construct outlines	005 005 005
Construct charts, graphs, tables, and diagrams	005 005 006
Construct bibliographies	005 005 007
Construct footnotes	005 005 008
Construct tables of contents	005 005 009
Apply location and study skills to material of personal interest independent of class requirements	005 005 010*
Utilize a personal checklist to evaluate progress	005 005 011*

*There are no Generic Objectives in this category.

VI.	READING IN CONTENT AREAS	006
A.	Reading in Literature	006 001
	Recall title, author's name, and important details	006 001 001
	Identify characters and describe characterization	006 001 002
	Describe plot and structure	006 001 003
	Describe setting	006 001 004
	Describe and discuss literary devices and techniques	006 001 005
	Describe and discuss symbolism and figurative language	006 001 006
	Describe diction, usage, and tone	006 001 007
	Identify and describe theme	006 001 008
	Identify and describe genre	006 001 009
	Evaluate author's purpose, values, theme, relevance, and effectiveness	006 001 010
B.	Reading in the Social Sciences	006 002
	Define terminology commonly used in social sciences	006 002 001
	Recognize order and sequence	006 002 002*
	Identify cause-and-effect relationships	006 002 003
	Make inferences and generalizations	006 002 004
	Analyze problems and propose solutions	006 002 005
	Compare and contrast facts and opinions	006 002 006
	Select and read social science materials of personal interest	006 002 007*
C.	Reading in Science	006 003
	Define terminology commonly used in science	006 003 001
	Identify main ideas and major concepts	006 003 002*
	Identify details	006 003 003
	Recognize order and sequence	006 003 004*
	Infer cause-and-effect relationships	006 003 005
	Distinguish fact from opinion, hypothesis, and theory	006 003 006
	Relate present reading to current problems	006 003 007
	Select and read science related materials of personal interest independent of school requirements	006 003 008*

*There are no Generic Objectives in this category.

D. Reading in Mathematics	006 004
Define terminology commonly used in mathematics	006 004 001
Identify the problem	006 004 002
Distinguish between relevant and irrelevant information	006 004 003*
Make generalizations	006 004 004

*There are no Generic Objectives in this category.